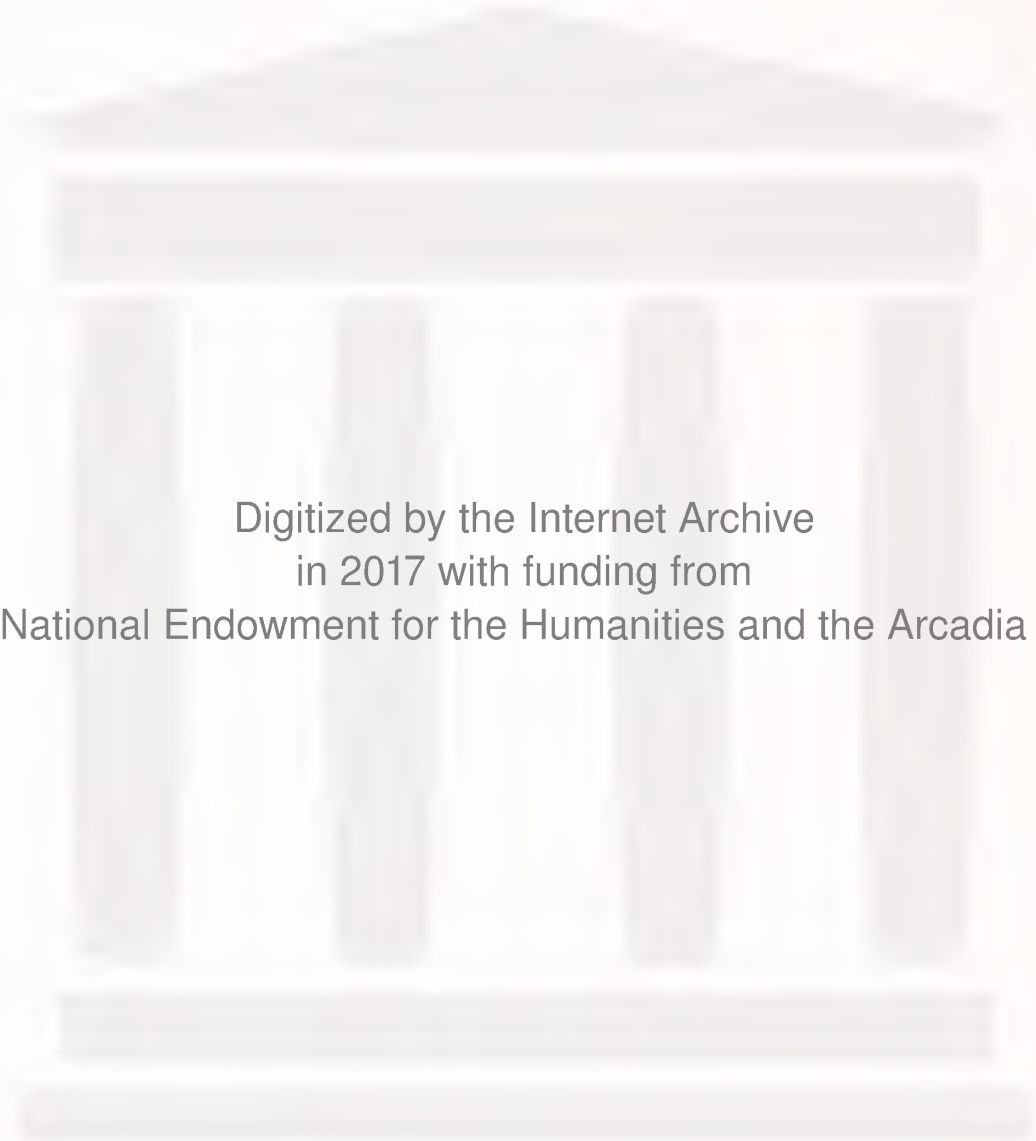


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SOUTH DAKOTA JOURNAL



MEDICINE *and* PHARMACY

PUBLISHED MONTHLY BY THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND
THE SOUTH DAKOTA PHARMACEUTICAL ASSOCIATION

JANUARY ● 1965

V.18, #1

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Dosage: Doses should be individualized for each patient. The usual adult sedative dosage ranges from 30 mg. (1/2 grain) to 50 mg. (3/4 grain) two or three times daily.

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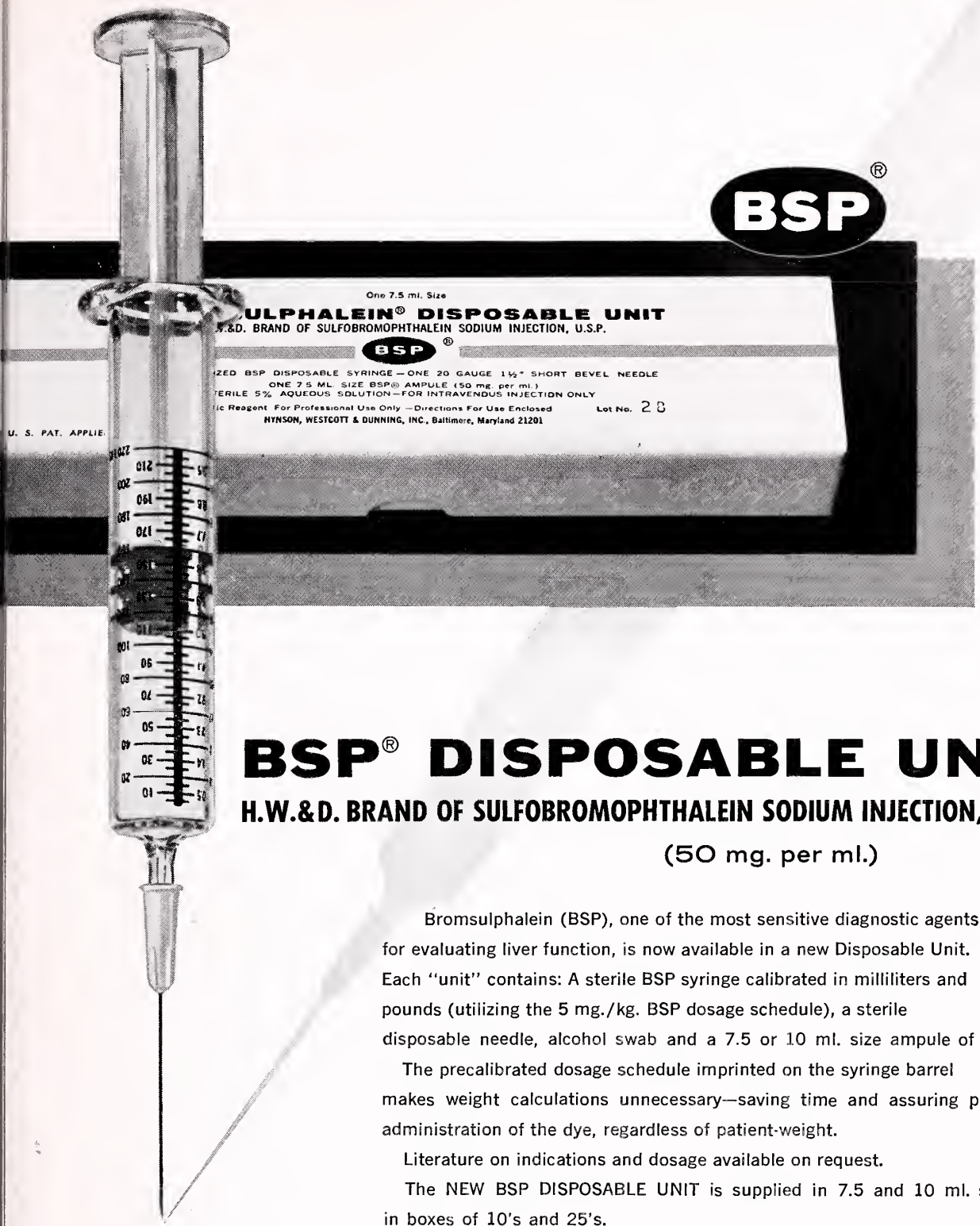
Precautions: Toxic effects are infrequent: allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Eruptions then usually subside. Though mild and rarely an indication for stopping dosage, gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered, especially in children, adolescents, and young adults. During initial treatment, minor side effects may include gastric distress, nausea, weight loss, transient nervousness, sleeplessness, and a feeling of unsteadiness. All usually subside with continued use. Megaloblastic anemia, aplastic anemia, leukopenia, granulocytopenia and pancytopenia have been reported. Nystagmus may develop. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. Periodic examination of the blood is advisable.

DILANTIN (diphenylhydantoin sodium) is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm.

*Roseman, E.: *Neurology* **11**:912, 1961. 33664

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Entered as second-class matter January 22, 1948 at the post office at Sioux Falls, South Dakota under the act of August 24, 1912

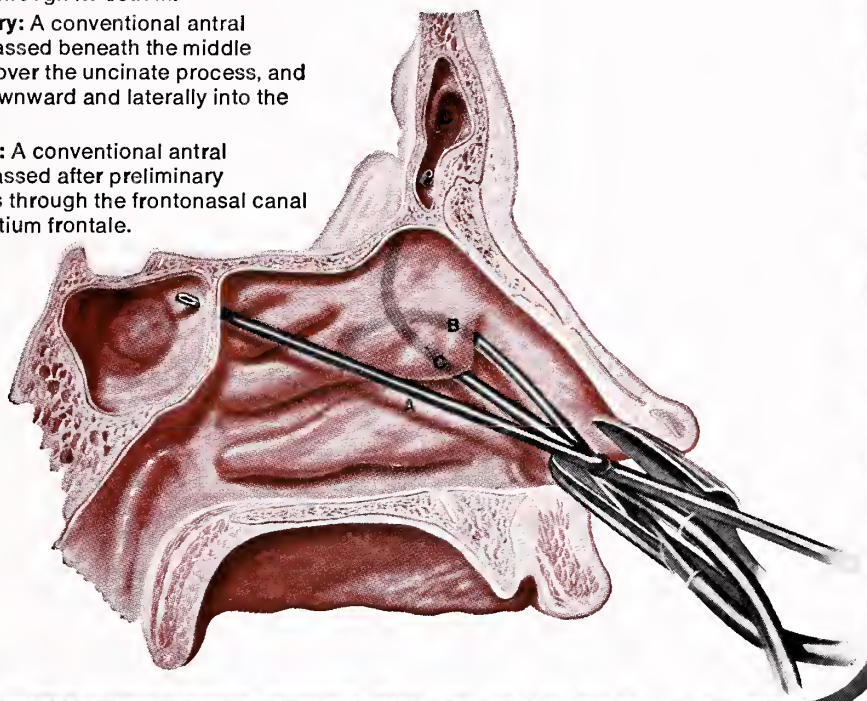
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*Reed, G. F.: Sinusitis, New England J. Med. 267:402, Aug. 23, 1962.

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*Adams, J.: J. Tenn. Med. Ass. 50:446, Nov., 1957.

Condition	No. of Patients	No. Responded To Signemycin
Otitis media	90	86
Pharyngitis and laryngitis	162	148
Sinusitis	68	55
Tonsillitis and peritonsillitis	163	153
Various	24	23
Totals	507	465 (91.7%)

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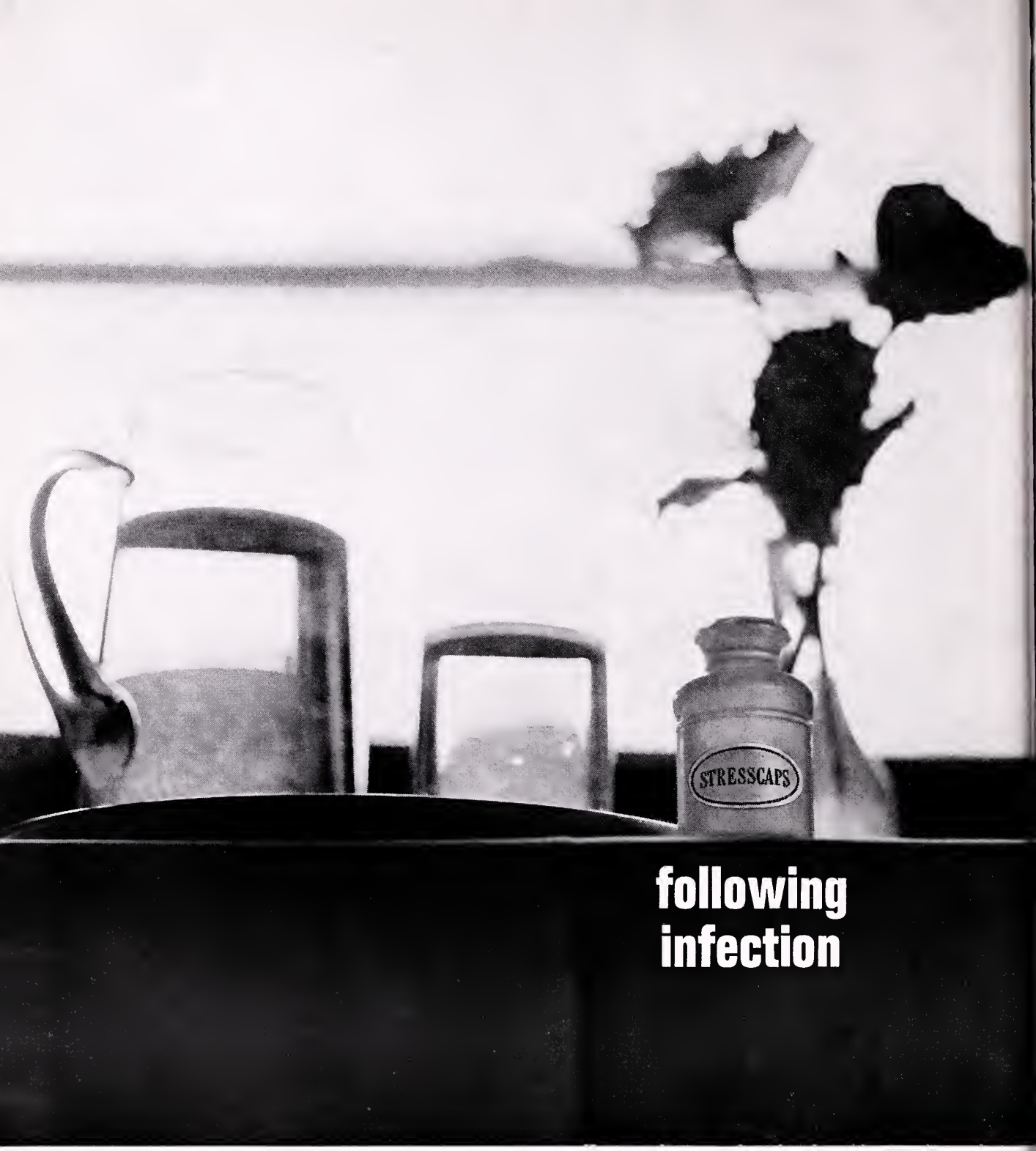
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Note:
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*Hammerl, H.: Wien. Med. Wschr. 108:629, July 26, 1958.

Condition	No. of Patients	No. Responded To Signemycin
Abscess, pulmonary	17	16
Bronchiectasis	19	13
Bronchitis	286	267
Bronchopneumonia	192	179
Empyema	12	11
Pneumonia, lobar	150	146
Pneumonia, other febrile	160	150
Various infected pneumopathies	192	172
Totals	1,028	954 (92.8%)

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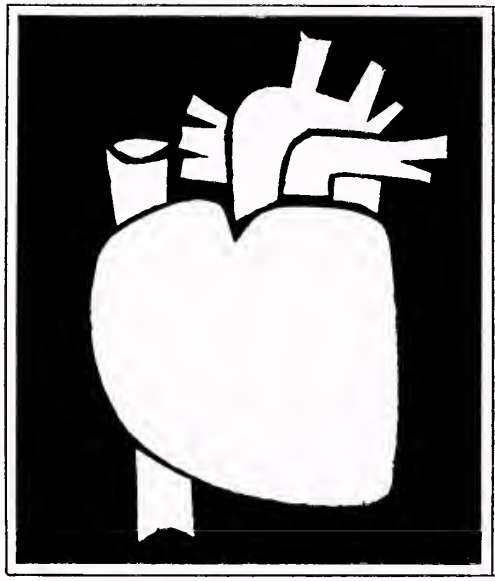
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Effective tranquilization plus long-acting coronary vasodilation for prophylaxis of pain in angina pectoris

Indications: 'Miltrate' is useful for prophylaxis of pain in angina pectoris and coronary insufficiency, especially where anxiety is a factor. **Contraindications:** Like all nitrates, pentaerythritol tetranitrate should be avoided or prescribed cautiously for patients with glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use. **Precautions:** *Meprobamate* — Patients engaged in activities requiring alertness should be warned of drowsiness. Meprobamate may increase the effects of excessive alcohol, and the possibility of dependence should be considered, particularly in patients with a history of drug or alcohol addiction. Sudden withdrawal may result in reactions, rarely epileptiform seizures. Grand mal attacks may be precipitated in persons susceptible to both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies. **Side effects:** *Pentaerythritol tetranitrate* — The most common side effects are transient headache, nausea, and rash. Weakness, palpitation, flushing, gastrointestinal distress, and lightheadedness have been reported on a few occasions. *Meprobamate* — May cause drowsiness and, rarely, ataxia, usually controlled by decreasing the dosage. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses of the drug. Mild reactions include urticarial or maculopapular rash. Serious reactions, rarely encountered, include dermatological effects, acute nonthrombocytopenic purpura, chills, fever, fainting spells, angioneurotic edema, bronchial spasm, hypotensive crisis, anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic, and the drug not be reinstituted. **Dosage:** Usual dosage is one or two tablets before meals and at bedtime. Individualization of dosage is required for maximum therapeutic effect. Doses above twelve tablets daily are not recommended. **Supplied:** White tablets, each containing meprobamate 200 mg. and pentaerythritol tetranitrate 10 mg.
Before prescribing, consult package circular.

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Of 1,021 children with various confirmed infections... 950 or 93.0% were treated successfully with Signemycin®

Note:
The effectiveness of Signemycin was demonstrated by Chattas and his co-workers* who administered Signemycin to 30 children with serious staphylococcal infections resistant to commonly used antibiotics. Only one failed to respond. In each case the use of this drug was indicated by antibiogram. Those children treated with a nonselected antibiotic—for comparative purposes—took three times longer to recover.

Chattas, A. et al.: Antibiot. Med. 7:300, May, 1960.

Condition	No. of Patients	No. Responded To Signemycin
Eye, ear, nose, throat infections	368	343
Respiratory infections	369	346
Gastrointestinal infections	42	30
Skin and soft-tissue infections	38	37
Deep-seated or generalized infections	47	44
Various conditions	157	150
Totals	1,021	950 (93.0%)

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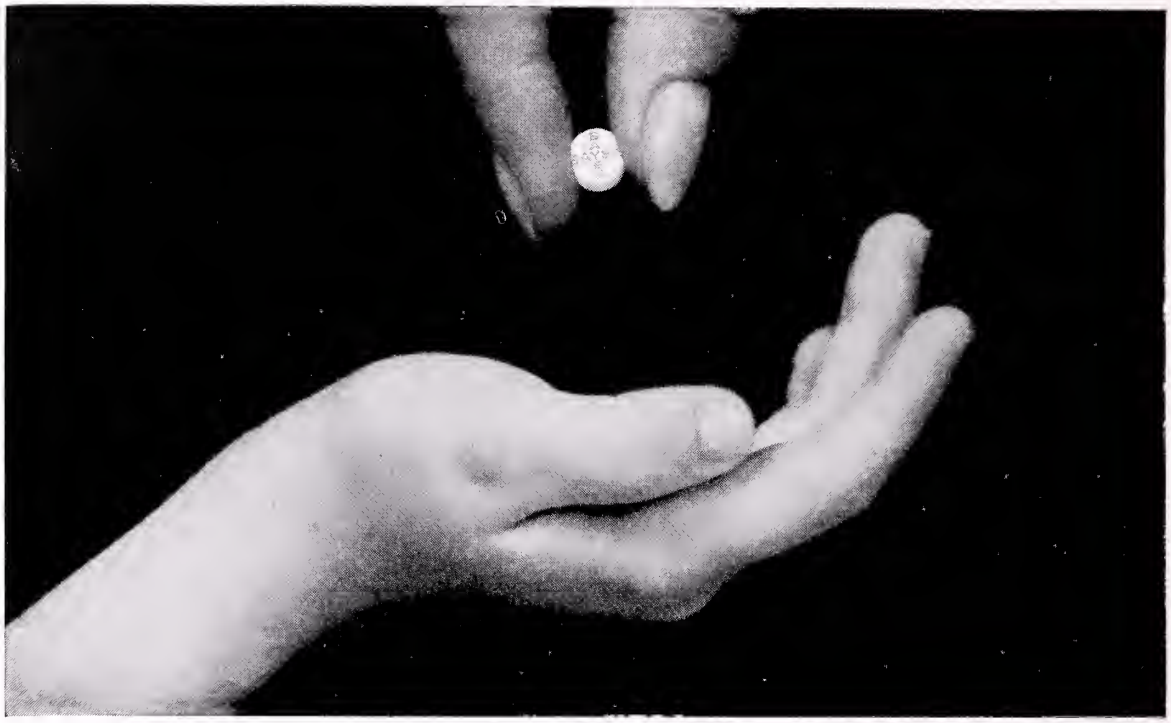
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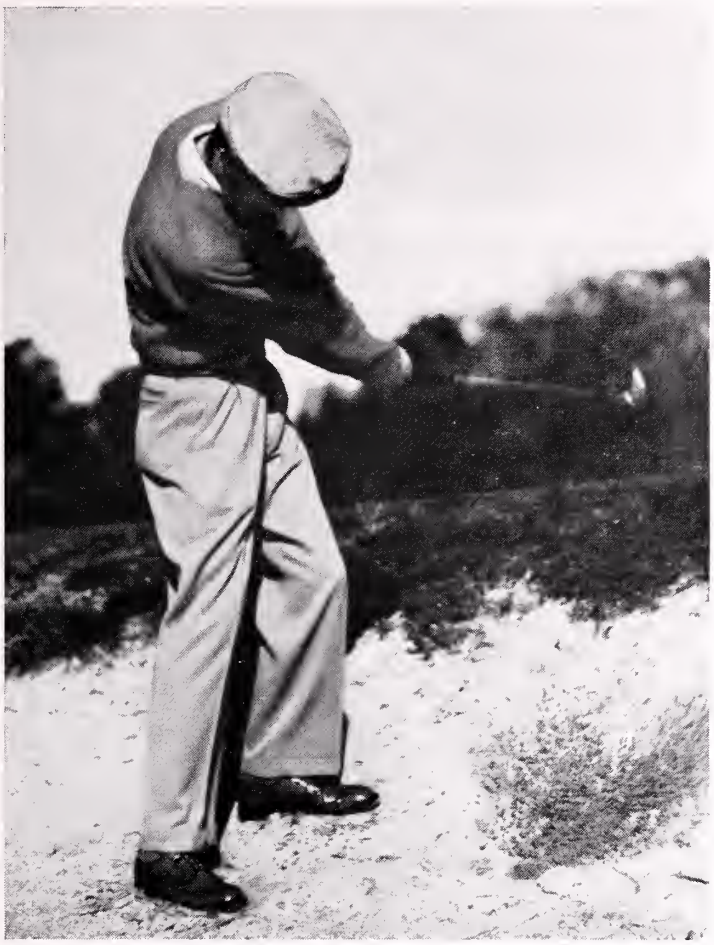
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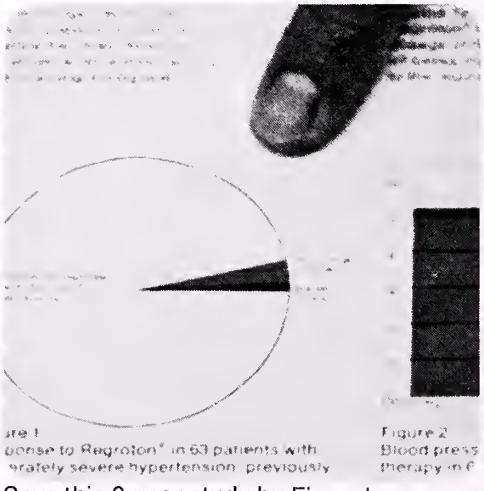
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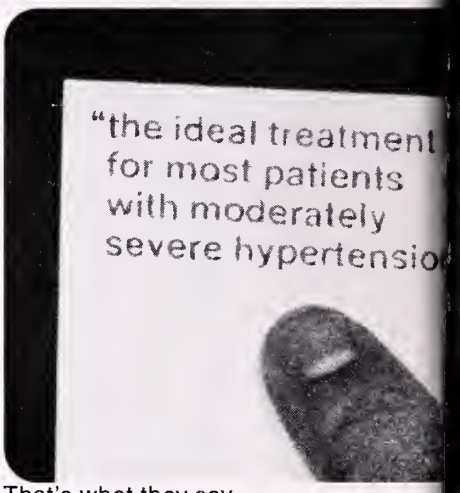
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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montre June 14–19, 1964.

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1. Griffith, R. S., and Black, H. R.: Current Ther. Res., *6*:253, 1964.

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MENINGITIS

by

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There have been very few new observations made in the management of acute bacterial meningitis in children in the last few years.[1] It still is a disease found predominantly in children and further, the majority of these young children.

Ordinarily meningitis is secondary to bacteremia, but occasionally is an extension from a contiguous infection. In early days, the medical students were required to learn the pathogenesis of streptococcus meningitis which started with pharyngitis, extended to the ear, involved the lateral sinus and finally the meninges. Since the advent of Penicillin, this process is no longer seen. Occasionally entry may be made through a meningocele or a skull fracture, as is usually the case with staphylococcus.

The most common organisms involved in children are hemophilus influenza, E. coli, meningococcus and pneumococcus;[2] Hemophilus influenza being most prevalent between the ages of one month and three years, E. coli before one month and meningococcus over three years. The explanation for this is relatively simple. A coliform antibody is transferred poorly across the placenta and results in little protection for the newborn infant. Because of the obvious contamination from the mother at the time of birth this organism is involved most frequently at this age. Fothergill[3] has shown that before the age of one month and after the age of three years there is active action against hemophilus influenza by defibrinated blood, but almost no action between their ages. This explains the relative lack of this infection at these ages.

A high index of suspicion is most important in arriving at the proper diagnosis. The classical symptoms of drowsiness, stiff neck, headache,

vomiting and convulsions are seen in older children but very frequently are absent in the child under the age of a year. It is good practice to remember that in any child that is acutely ill with a high white blood count with a lack of significant physical findings, meningitis must be considered and ruled out by lumbar puncture.

There is a higher incidence of meningitis in males.

Besides the age of the patient, a reasonable clinical guess may be made as to the etiology. If the patient has petechiae it nearly always points to meningococcus. Less than 1% of patients with other types of meningitis have petechiae whereas 50 to 60% of cases of meningococcus meningitis have this phenomenon. The significant physical findings are lethargy or stupor, irritability, positive Brudzinski, fever, and respiratory infection.

The laboratory examinations that are most important are white blood count, spinal fluid and blood culture. In most bacterial infections the white blood count is elevated and although not a completely constant finding is helpful in differentiating the viral from bacterial meningitides. The cerebral spinal fluid is nearly pathognomonic with bacterial meningitis giving high counts (usually over 500) predominantly polymorphonuclear, and the viral meningitides showing predominantly lymphocytes (usually less than 1,000 total cells). Culture of the spinal fluid frequently reveals the organism unless previous therapy has been instituted. Blood culture is a substantiating laboratory procedure that may, on occasion, reveal the organism that was missed by cerebral spinal fluid culture.

Treatment of meningitis has been standardized fairly well, although it must be individualized according to the causative agent. Should the patient be admitted with an unknown organism, treatment must be instituted that would be most apt to destroy all possible organisms. For practical purposes the accepted mode has been to use Sulfadiazine, Penicillin, and Chloramphenicol (or possibly Tetracycline). Once the organism is found by culture, the proper drug may be continued and the extraneous ones discontinued.

With hemophilus influenza, Chloramphenicol is the drug of choice, although as previously mentioned, Tetracycline may be used. It would seem, in the review of the literature, that the patient who survives from 24 to 36 hours of treatment will usually recover. Meningococcal meningitis responds readily to Sulfadiazine. E. coli meningitis is most successfully treated with Chloramphenicol, although obvious care with this drug must be used since these infants are usually in the younger age group that suffers from the so-called "gray sickness." Pneumococcus meningitis responds readily to Penicillin in large doses, usually without other additive antibiotics or therapeutic agents. Staphylococcus meningitis may respond to Penicillin, but in the case of a resistant organism may require specific drugs according to laboratory testing.

In the case of meningococcus meningitis and the treatment of so-called Waterhouse-Friderichsen's syndrome, no definite treatment has been accepted other than the antibiotic therapy. The corticosteroids have been suggested for all patients to prevent cardiovascular collapse. May,[4] however, has indicated that steroids may actually be harmful to the patient with meningococcemia. This has been suggested from experimental observation. Margaretten and McAdam reported three fatal cases of meningocoxemia in patients with autopsy findings of renal cortical necrosis who had received adrenal cortical extract or Hydrocortisone. Its use at the present time, therefore, cannot be recommended.

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Role of the Radiologist in Diagnosis of Infection*

by

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Associate Professor of Radiology
University of Kansas Medical Center
Kansas City, Kansas

It is seldom that the radiologist is the first to diagnose infection, since the clinical signs of infection: heat, pain, swelling, leukocytosis, and fever, are usually discovered before he is consulted. Exceptions to this are met in the very old and debilitated and in the very young, who are known to react differently to infection. A pneumonic process in a child may be manifest clinically only as a "failure to thrive," or an osteomyelitis as merely a limp or favoring of a limb in a young child. Under such conditions the burden is on the clinician to request x-ray consultation in any such case.

When infection is suspected, the area to be examined is indicated to the radiologist. His role then remains only one of answering yes or no, and if yes, to what extent. Sometimes the question of differentiation between infection and tumor arises, but microscopic examination is usually required for this.

Head and Neck Area

In the head a possible brain abscess would be sought only by special techniques such as arteriography. When properly done, this is one of the most innocuous procedures. Seriographic equipment is essential and the artery, capillary and venous phases of the circulating contrast material will usually delineate the area of abscess satisfactorily.

Sinus x-rays are essential for a thorough evaluation of possible infection in this area. Although the transillumination is adequate for following sinuses, it does not differentiate differences in bone development of the two sides.

Studies of the petrous pyramids and mastoid cells have become more important with the advent of antibiotics as some infections insuf-

* Presented at the Annual Meeting of the South Dakota State Medical Association, May 30-31, June 1-2, 1964.

ficiently treated may smolder without the usual symptoms associated with mastoiditis. To evaluate possible bone destruction, the x-rays are essential and must be of very high quality. Planograms are useful in this area particularly when made with a special cassette allowing multiple sections at 1 mm. intervals with a single x-ray exposure. Collimation of the x-ray beams and shield over the film limiting the exposure to the desired area adds significantly to the contrast quality of the films.

The adenoid area and retropharyngeal area may be most easily and effectively examined by a lateral soft tissue film of the head and neck. For best filming one should expose for bone detail, and underdevelop the film, thereby revealing both bone and soft tissues.

Chest

It is possible to see through the heart shadow with a well penetrated film. The "silhouette" sign differentiates anterior from posterior consolidation in the posterior-anterior view. Still, it is desirable to take both PA and lateral views of the chest for a complete evaluation of the chest. One of the principal contributions a radiologist can make is the supervision of the examination so the most possible information may be demonstrated in as decisive a manner as possible. Even during suspended respiration there is considerable motion of blood vessels in the lungs; therefore, a short exposure of 1/20th of a second or less essential. Because of the limitations imposed by the physiology of the human eye, a certain adequate contrast must be portrayed in the films. This latter feature is accomplished to some extent by the emulsion used, but more important is the control of scatter radiation generated in the patient so it does not reach the film and fog the image from the primary x-ray beam. For this, air space between the patient and the x-ray film of 10 to 12 inches is especially useful, and for the study of a large chest even more important than the use of a grid.

Certain characteristic types of shadows in the lungs, although not necessarily making a specific etiological diagnosis, do limit the possibilities and suggest the most appropriate direction of further investigation. I refer to the multiple soft shadows of an embolic process scattered over both lung fields compared, for example, with the linear and soft nodular deposits with fibrosis and granulomas. Inhalation of tobacco smoke for twenty years produces similar changes which are most dramatically illustrated by bronchography.

The prominence of the left atrium in the lateral view of the heart or the double contour shadow in the PA view may reveal a mitral heart disease from an unsuspected old rheumatic process.

Inasmuch as the reservoir for human tuberculosis infection is primarily the old tuberculous person who has become reactivated, a careful check must be kept on the chronically or acutely ill elderly person.

Because a pneumonitis in the lower right chest may produce symptoms of abdominal pathology, a chest x-ray should precede every abdominal operation.

Abdominal Area

A common x-ray examination for abdominal infection is in the post-operative patient where the problem relates to a possible sub-diaphragmatic abscess. For this purpose, fluoroscopy is especially useful to see if there is limitation of movement of the diaphragm. In addition, the fluoroscopist will look for associated phenomena sometimes seen, which include pleural effusion producing blunting of the costophrenic angle in the chest, and streaks of discoid atelectasis in the lung base, which are associated with diminished excursion of the diaphragm. Such atelectasis should not be confused with that of a primary pneumonitis, as the pathology in the former condition is primarily in the abdomen, producing only physiological and anatomical changes in the chest.

Infection within the liver, such as liver abscess, is best sought with radio-active scan. However, if the abscess can be located with a needle and injected, the cavity may be outlined either with one of the injectable aqueous iodides or with air.

An intra-abdominal abscess, if large, may be identified by the disorganized gas pattern not confined to the bowel shadows.

Infections of the male or female genital tract resulting in obstruction can be identified by injecting diatrizoate or meglumine iothalamate into the tract and filming, usually, with spot films. The latter is less irritating when spilled into the peritoneal cavity.

Urinary tract infections in children have received new emphasis. Recurrent upper tract infections, associated with reflux and residue, present a surgical challenge that is yielding to a concerted effort. Cine radiography is an ideal method for recording the voiding act in these children and demonstrating the pathology. Some investigators think that there is reflux into the

(Continued on Page 24)



Is Amputation Necessary In The Treatment Of Gas Gangrene?*

By

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Gas gangrene is caused by the proliferation of organisms of the Clostridium genus in anaerobic conditions which results in massive death of tissue and the formation of gas. The gas production builds up pressure in tissue layers which in turn creates ischemia and additional anaerobic areas and permits spread of the infection. This process together with the ability of the organisms to produce several highly potent toxins gives rise to an extraordinarily overwhelming infection with a mortality rate of more than 50 per cent.

The desperate situation called gas gangrene should not be confused with conditions in which Clostridium may be cultured from wounds or from a relatively nontoxic abscess. Wilson[1] studied the incidence of clostridial organisms in hospitals and found them ubiquitous, but he reported that infections from which Clostridium welchii or related organisms could be cultured constituted only 1.76 per cent of wounds in civilian hospitals. Only two of 63 patients with clostridial infections had gas gangrene. The other patients who had positive cultures of Clostridium had either simple contamination or local abscess formation. Eighty per cent of the clostridial organisms were Clostridium welchii, 10 per cent were Clostridium septique, 3 per cent were Clostridium oedematiens, and the remainder were other strains. There were no instances of proved cross infection, an indication that the presence of pathogenic anaerobic organisms by itself is not sufficient reason for any extraordinary precautions or isolation technics.

Before a discussion of the role of toxins and antitoxins and the surgical treatment of gas

* Read at the meeting of the South Dakota State Medical Association, Sioux Falls, South Dakota, May 30 to June 2, 1964.

gangrene, it may be well to discuss preventive measures and the role of antibiotics.

It is obvious that prevention is the best treatment. The principles of good wound toilet, obliteration of dead space, and careful closure of wounds in layers and without undue tension are time-proved tenets of good surgical technic. It seems reasonable to stress that wounds contaminated with soil or involving compound fractures should not be closed primarily. After careful debridement of devitalized tissue and thorough cleansing and irrigation, the wound should be packed open for 4 to 7 days and then treated by delayed primary closure of the skin edges only. The clostridial organisms, including Clostridium tetani, are natural inhabitants of the soil on which animals live and do not grow in healthy tissue.

If antibiotics are to be used prophylactically in compound fractures or in the treatment of gas gangrene or less serious clostridial infections, it would be interesting to know what the sensitivity of species of Clostridium is to antibiotics in vitro. Newton and associates[2] found that Aureomycin and Terramycin were the most effective antibiotics in 10 species tested, more than 98 per cent being inhibited by concentrations equivalent to a 0.5-gram dose in an adult patient; chloramphenicol and penicillin were effective in inhibiting the same species in only 80 per cent of the tests. Therefore, the tetracyclines appear to be the antibiotics of choice in the treatment of clostridial infections. It is unlikely that antibiotics are of any real value in prophylaxis, because in traumatic wounds, ischemia often occurs in areas of tight closure or hemorrhage and prevents penetration of the antibiotic into the site of growth of the organism.

Clostridium welchii as well as other species produces a number of toxins under conditions of gas gangrene infections. The natural urge to use antitoxins in treatment and to try to develop natural immunity by injections of toxoids has been the spur to many investigations on animals and man. MacLennan and Macfarlane[3] found that, in spite of the use of antitoxins in gas gangrene infections in man, the mortality rate was 50 per cent even after good surgical treatment. They concluded that circulating antitoxin is incapable of arresting the local spread of gas gangrene. Furthermore, the circulating antitoxin will not prevent death from toxemia. This is in contrast to the striking effect of antitoxin in small and, to a lesser extent, large animals.

The discrepancy between the value of toxoids in small animals and that in larger ones, including man, was pointed out by Reid and associates.[4] They recorded their experience in the observations on the survival time of goats which had explosion injuries of the thigh. The treated goats had previously had three injections of toxoid 2 weeks apart. The goats previously immunized had a survival rate of 78 per cent over a 36-hour period as contrasted with 40 per cent in those treated with penicillin only and none in those with no immunization and no penicillin. The toxoid immunization does not prevent death, but it does postpone it. Strangely enough, toxoid immunization is much more effective in very small animals. It appears that once gas gangrene has occurred, prophylaxis with toxoid or antitoxin or treatment with antitoxin has no significant effect on the survival rate in man.

Clinical reports such as those of Kenyon and associates[5] and Roberts and Bassett[6] emphasize the fact that when gas gangrene occurs it is usually following major trauma with vascular injury and circulatory impairment. However, the point they do not emphasize, but one that is evident to a surgeon who has been sensitized by the experience of World War II or the Korean conflict, is that in almost all clinical cases of gas gangrene in civilian practice the compound fracture or the large soft-tissue wound has been closed primarily. Not only gas gangrene but also tetanus and the usual pyogenic infections can be expected to arise in a fairly definite percentage of wounds that have been closed primarily. Some surgeons in the large cities say that this does not occur in their practice, but it seems reasonable that all surgeons should be constantly aware of these dangers.

Kenyon and associates[5] have expressed the belief that the most important single attribute for the surgeon to display if he is to be successful in the treatment of gas gangrene is a high degree of suspicion that such a catastrophe may be in the making. Even more effective is good preventive surgery, including good wound toilet, closure of dead space, closure without tension, or open treatment of the wound. If clinical gas gangrene occurs early, radical surgical treatment is essential. The physician should be alerted to the possible occurrence of gas gangrene when a patient with an open wound has an abnormal amount of pain with fever and a very high pulse rate. Inspection of the wound will reveal obvious evidence of local infection with edema, redness, increased local tempera-

ture, and, in addition, gangrene of the skin and muscles and formation of gas in the subcutaneous tissues. The patient may become very toxic in a brief time. At this stage, no conservative treatment will suffice. Immediate surgical attack on the local condition is imperative to save the patient's life. The surgical principles are based on the characteristics of the organisms involved and the clinical infection. Obviously the pressure of the gas must be released. In addition, all devitalized tissue must be ruthlessly removed, because these tissues are perfect culture media for the anaerobic clostridial organisms. This frequently means the excision of large areas of necrotic muscle regardless of the subsequent functional loss. Amputation may be necessary if the entire distal portion of the extremity is completely necrotic. However, amputation should not be done indiscriminately as a response to panic in the face of a desperately sick patient. Living tissue will not support the growth of the anaerobic organisms. If the progression of the necrosis and gangrene can be stopped by excision of dead tissue and exposure of the living tissue to air or oxidizing material, this should be done in preference to early amputation. The following case of a patient treated by the author emphasizes this point. Although an amputation had already been done, further amputation at a higher level was necessary, but it was possible to amputate well distal to the level of proximal migration of gas and gangrene of tissue by thorough debridement of necrotic tissue and open treatment of doubtful areas.

Report of Case

A 15-year-old boy was first seen at the Mayo Clinic on July 11, 1962, 4 days after he had injured himself in a fall from a tree. He had sustained a compound fracture of the right radius and ulna in the distal third and a dislocation of the right elbow. The fractures and wounds had been treated within 2 hours with closed reduction of the elbow and open reduction of the fractures of the forearm. The wounds had been closed primarily and a cast applied. The following day, there had been swelling of the fingers and severe pain in the forearm. Forty-eight hours after the injury, the cast had been bivalved because of more swelling and odor. Seventy-two hours after the injury, the fingers and thumb had turned blue. Gas gangrene had been diagnosed. The extremity had been amputated through the proximal third of the forearm, partial suturing of the skin wound performed,



Fig. 1. Forearm at operation before removal of skin sutures, 96 hours after fracture, and 24 hours after first amputation.

and the patient given 80,000 units of gas gangrene antitoxin and 1 gram of tetracycline. He had then been transported to the Mayo Clinic.

On initial examination at this clinic, he was toxic and had severe pain in the right arm. His temperature was 100°F., and his pulse was 125 beats per minute. The patient was alert. Removal of the dressings revealed gangrene of the muscles of the remainder of the forearm and of the skin in this area with gas production up the medial aspect of the arm almost to the axilla; the patient was taken to the operating room the same day (fig. 1). The sutures were removed from the skin wounds, and all the muscles of the forearm except a few of the flexor group were found to be grossly necrotic (fig. 2). The gangrene had spread up the neurovascular bundle on the medial aspect of the arm around the brachial artery and median nerve. A mid-arm amputation was performed; a longer posterior skin flap was left. The areas of gas in the subcutaneous tissues were opened by incisions, and all necrotic and inflamed tissue was excised. All the muscles which remained in the amputation stump were viable and had good circulation. No sutures were used. The wound was packed completely open with iodoform gauze and a nonpressure dressing. Three days later, on July 14, the patient was taken to the operating room again. The wound looked clean. The patient's tempera-



Fig. 2. Forearm and elbow after release of sutures, showing extensive necrosis of forearm muscles before mid-arm amputation.

ture and pulse were normal. A secondary closure was done, the skin flaps being closed with interrupted mattress sutures. A Penrose drain was left in the stump. There was a moderate amount of bloody drainage from the stump following the operation. The drain was removed 2 days postoperatively, and the wound healed satisfactorily. The patient has had no further evidence of infection.

Summary

Gas gangrene is an overwhelming infection by an anaerobic organism which causes massive death of tissue, the formation of gas in the tissues, and severe toxicity. The best treatment is prevention by well-known surgical principles advocated by the military in the last two wars.

As far as is known, prophylactic treatment by antibiotics, toxoids, or antitoxins is not effective in man.

Tetracyclines are the most effective antibiotics in treatment. There are no data to indicate that passive immunity by antibodies has any therapeutic effect in the treatment. Furthermore, active immunization apparently does not occur in man in response to toxoid immunization, although it does so in small animals.

Vigorous early surgical treatment including ruthless excision of all devitalized tissue may allow preservation of the extremity with possibly major functional loss.

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ROLE OF RADIOLOGIST—

(Continued from Page 20)

ureters whenever there is a bladder infection. The analysis of etiological factors in any case requires careful scrutiny. The most common form of this disease is in young girls. It has been suggested that bathing with siblings in a bathtub may be the means of starting the cystitis in the little girls.

Some children are not cooperative and will not void on command, hence it is convenient to inject some ascendant lipiodol before doing the instillation of the regular aqueous contrast material. The ascendant oil remains in the upper portion of the bladder and will be seen on a later film after voiding, unless the bladder empties completely.

While Cine radiography is the method of choice for detecting reflux which may be of only short duration during the increased pressure of voiding, the exam can be done quite well with spot films. Oblique views are important for evaluation of sphincters and to demonstrate a uretheral valve. Familiarity with the normal uretheral anatomy best revealed in spot films is essential to avoid unnecessary surgery, as well as to identify the pathology.

Thus, the role of the radiologist in the diagnosis of infections is seen as that of a collaborator who brings to bear on the problem procedures which he is specially qualified to evaluate.

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THE ROLE OF THE PHYSICIANS IN PROMOTING SAFETY UPON THE SOUTH DAKOTA HIGHWAYS

This editorial was written on September 30, 1964. As of that date, there had occurred upon the highways of South Dakota, 198 fatalities as compared to 152 on the comparable date one year ago. The obvious question arises as to exactly what position should be taken by the medical profession of this State regarding the appalling increase in deaths from traffic accidents and what should be done by the physicians to help curb this slaughter upon the highways.

Is this increased mortality due to drunken driving? Is to due to high speed? Is it due to physical or mental incompetence at the wheel? Is it due to preventable circumstances? These are the questions which must be asked each time a traffic fatality occurs.

On September 26, 1964, a meeting of the **Traffic Safety Committee** of the State Medical Association was held. It was the recommendation of this committee that every physician of this State receive a copy of the "Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle," and a copy of the "Special Report" page of the **Journal of the American Medical Association,** Volume 187, February 1, 1964, entitled, "Medical Aspects of Driver Limitation," so that each can be aware of the current thinking in regard to the medical aspects of traffic safety and accident prevention. This material has already been made available to each and every physician in the State as of the date of printing this editorial. Both leaflets should be carefully perused and contemplated; then saved for future reference.

It is to be hoped that the physicians of this State will be constantly aware of the illnesses and diseases which have the potentiality of interfering with driver capability and will call these to the attention of their patients in appropriate circumstances. It is also to be hoped that each physician will constantly be aware of and call to his patients' attention the various factors which may impair driving ability and warn them of the potential danger of drugs, fatigue, alcohol, carbon monoxide gas, etc., so that these individuals do not become statistics.

It has been recommended by the Governor's Traffic Safety Committee and Support Group that a Medical Advisory Board on driver licensing be appointed by the South Dakota Motor Vehicle Department. The purpose of this Board would be to advise the Commissioner of Motor Vehicles in regard to measures which would insure public safety upon the highways and to assist in solving problems which may arise relating to the medical aspects of traffic safety.

The medical profession can be instrumental through such a Board in improving the safety factor upon the highways. The value of such a Board would be enhanced if it was composed of members of the Medical Association representing the various disciplines of medicine. Such a committee will be doubly important in that it permits the medical profession to partake in and influence legislation and rule-making in matters which pertain to medicine, rather than having various measures forced upon the physicians by various politically ambitious organizations. The

support of the entire medical group for this medical advisory group will be needed.

Members of the Traffic Safety Committee are continually attending meetings in the State and in various parts of this country to obtain information regarding the safety measures which have been instituted in other states. The information obtained at these meetings will be made available to the South Dakota Commissioner of Motor Vehicles and to the State Medical Association as soon as it is received so that immediate full benefit of it can be made to those living in this state.

J. B. Gregg, M.D.

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The registration fee for this program is $10.

The number of physicians who can be accommodated is necessarily limited. For this reason identical programs will be offered two successive weeks. The program will be presented first on March 15, 16 and 17 and repeated on March 22, 23 and 24. Those wishing to attend should communicate with M. G. Brataas, Mayo Clinic, Rochester, Minnesota, indicating which session they would prefer to attend.



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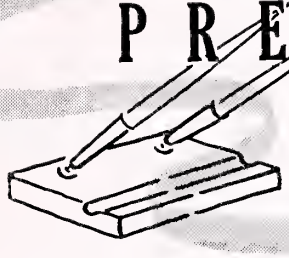
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PRESIDENT'S PAGE

Dear Fellow Members,

In a recent issue of our Journal there appeared an article by Doctor Walter Hard, Dean of the School of Medicine at Vermillion. Doctor Hard brought out some very interesting facts in his article which should give pause to many of us. A summation of his statistics, which are subject to slight error due to lack of information, shows that during 1963 the average contribution per South Dakota physician to medical education was in the neighborhood of $25.00.

If this average annual investment in medical education by the practicing physician should hold true for the next 20 years, it would mean a contribution in the neighborhood of $500.00 over a twenty-year period for each doctor.

This seems a rather miserly investment to make in the future of our profession, and a rather feeble expression of gratitude for what it has done for us in the past.

I know there are many who have contributed far more than the average, but it is obvious from this that there are also many who have contributed nothing.

I, therefore, make a plea that you search not only your soul, but your hip pocket and your checkbook to see if something can be done to improve this situation.

Perhaps one reason the figures are low is the confusion existing about various methods of giving to the medical school. As in many cases when one receives a multiplicity of requests, it guarantees that nothing is done. Let me list the three major funds to which you are asked to give on a regular basis.

1. South Dakota Medical School Endowment Association. This is a local organization within the State of South Dakota and this money has been used in the past mainly to provide loan funds to students.
2. The AMA-ERF. This is an AMA sponsored organization in which the physician may contribute to a fund organized by the AMA for helping medical schools. This money may go either to a general fund or may be designated for a specific school. These funds have not been used for loan funds and are used for budgetary items by the medical schools.
3. The AMA-ERF medical student loan program is another fund on a national basis and is a guarantee loan fund for medical students.

All three of these funds are well administered and meet a very definite need. While I should make no attempt to tell you to which fund to contribute, there is the old principle that local funds, locally collected and administered, may be more carefully watched and do a job more in line with local needs. These thoughts, then, would apply to the South Dakota Medical Endowment Association, which has an overhead of practically zero.

It was the original intention that this fund would provide not only for student loans, but also for medical school teaching equipment, professorial salaries and professorial benefits.

It seems to me that with all the talk about underpaid teachers we sometimes forget our medical school professors, and forget that we are asking them to teach our up and coming young physicians for less than any of us make in practice. Not only do we ask them to teach, but we sometimes become very critical of the way they do it.

I would, therefore, make a plea that we try very hard in the future to increase our contributions to the South Dakota Medical School Endowment Fund so that there will be sufficient funds available to give help in many ways to our medical school staff and to the physical plant. In addition, we can also work on our legislators to provide budgetary money to increase medical school funds and salaries.

Fraternally,
James P. Steele, M.D.
President

70th SIOUX VALLEY MEDICAL ASSOCIATION MEETING

One of the first and oldest post-graduate assemblies will hold its annual meeting in Sioux City, Iowa, on Thursday and Friday, the 18th and 19th, of February, 1965. This meeting is under the sponsorship of the University of South Dakota School of Medicine, and comprises members from the adjoining four states. The clinical portion of the program will be held at St. Vincent Hospital, Thursday morning. The remainder of the program will be at the Sheraton Warrior Hotel. The registration fee will be $5.00, and the program is accredited for 11 hours, by the American Academy of General Practice.

WEDNESDAY EVENING, 17, FEB. 1965

7:00 Hospitality Room — Sheraton Warrior.
Your Host: Physicians and Hospital Supply Company, Minneapolis, Minn.
Refreshments, movies, music — Wives — expected.

THURSDAY 18, FEB. 1965
Morning Session
Saint Vincent Hospital

8:30 Registration — Auditorium Nurses Home.
8:55 Greeting — Dr. J. P. Tiedeman, President of Staff.
9:00 "THE ULTRASTRUCTURE OF THE KIDNEY"
Earl B. Scott, Ph.D., Professor of Anatomy
Chairman of Department of Anatomy — University of South Dakota School of Medicine.
9:30 "RECENT CONCEPTS OF KIDNEY FUNCTION"
Willard O. Read, Ph.D., Professor of Physiology
Chairman of Department of Physiology and Pharmacology, University of South Dakota School of Medicine.
10:00 Coffee Break and Visit to Cobalt Unit
10:30 "CLINICAL APPLICATION OF COBALT THERAPY"
C. M. Marriott, M.D., Sioux City, Iowa
W. S. Thoman, M.D., Sioux City, Iowa
11:00 "INDICATIONS AND CLINICAL USES OF ARTIFICIAL KIDNEY"
George G. Spellman, M.D., Sioux City, Iowa
"ARTERIO VENOUS SHUNT FOR INTERMITTENT DIALYSIS"
Ahmad Akibari, M.D., Sioux City, Iowa
12:00 Luncheon — St. Vincent Hospital Dining Room

THURSDAY AFTERNOON
Sheraton-Warrior Hotel

1:00 Registration and Visit Exhibits
1:30 Movie — Complete Office Gynecological Examination
Fredrick J. Hofmeister, M.D., Milwaukee
2:00 "GERIATRIC GYNECOLOGY"
Leon S. McGoogan, M.D.; Professor of Obstetrics and Gynecology
University of Nebraska School of Medicine
2:30 "PHYSICAL PROBLEMS IN ADOLESCENCE"
Bryan Oberst, M.D., Chairman of Dept. of Pediatrics, Archbishop Bergen Hospital. Assistant Professor of Pediatrics, University of Nebraska
3:00 Visit Exhibits
3:30 "PRESENT DAY MANAGEMENT OF THE MENOPAUSE"
Leon S. McGoogan, M.D.
4:00 "SOCIAL AND PSYCHOLOGICAL PROBLEMS IN ADOLESCENCE"
Bryan Oberst, M.D.

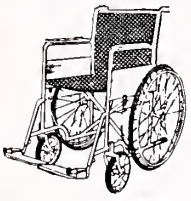
EVENING SESSIONS

7:00 Dinner — Ballroom
"MEDICAL QUACKERY"
Banquet Speaker — Mr. Oliver Field, A.M.A. Investigative Division, Chicago, Illinois
9:00-12:00 Dancing — Dean Houlihan Orchestra

FRIDAY 19, FEB. 1965

8:30 Exhibits Open
9:00 Movie: "FORTY CAUSES OF ABDOMINAL PAIN"
Higer Perry Jenkins, Chicago
9:30 "HALOTHANE AND SHOCK"
Max Sadove, M.D., Professor of Anesthesiology. Head of Division of Anesthesiology, University of Illinois, at Medical Center, Chicago
10:00 "HEMATURIA"
William Bowles, M.D.; St. Louis, Missouri
10:30 Visit Exhibits
11:00 "MODERN CLINICAL MANAGEMENT OF DIABETES MELLITUS"
E. A. Hounz, M.D., Professor and Chairman of the Department of Medicine. University of North Dakota School of Medicine.
12:00 Luncheon — Sheraton Warrior Hotel
Discussion: Max Sadove, M.D., E. A. Hounz, M.D., William Bowles, M.D.
1:00 Movie — MEDICAL GENETICS I
1:30 "SHOCK AND ITS MANAGEMENT"
Max Sadove, M.D.
2:00 "NOSE AND THROAT PROBLEMS IN RELATION TO GENERAL PRACTICE"
E.E.N.T. Academy
3:30 "UROLOGICAL CANCER'
William Bowles, M.D.

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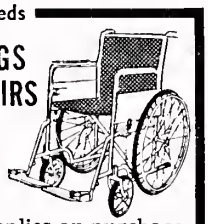
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PSYCHIATRY FOR THE MEDICAL PRACTITIONER

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GUEST LECTURERS INCLUDE:

Jack Ewalt, M.D., Prof. of Psychiatry, Harvard Med. School, Past Pres. of American Psychiatric Association, Boston, Mass.

John Lambert, M.D., Medical Director, Four Winds Hospital, Katonah, N. Y.

Zigmond Lebensohn, M.D., Chief, Dept. of Psychiatry, Sibley Memorial Hospital, Washington, D. C.

William Sheeley, M.D., Director of Psychiatry & Medical Practice Project of the A.P.A., Washington, D. C.

Philip Solomon, M.D., Chairman, A.P.A. Committee on Medical Practice, Boston, Mass.

Course will be given at Jung Hotel, 1500 Canal Street, New Orleans, La. Hotel reservations to be made directly with the Jung or hotel of your choice. Registrants who would like to enjoy Mardi Gras (March 2) are urged to make hotel reservations immediately.

Guest speaker for the luncheon on March 4 will be George Burch, M.D., Henderson Professor and Chairman, Dept. of Medicine, Tulane Medical School. Subject: "Emotions and Cardiovascular Disease." Cost of luncheon included in registration fee. At the end of Friday's session, there will be a dutch treat two-hour cocktail party with George Lewis and his band from Preservation Hall entertaining.

AMONG TOPICS TO BE DISCUSSED:

"Detection of Incipient Psychiatric Disorders During a General Medical Examination"
"Medical Practitioners and Supportive Handling of Schizophrenia"
"Adolescents — Disturbed and Disturbing"
"The Physician and His Reaction to the 'Crock' "
"Newer Thoughts About the Therapy of Alcoholism"
"Medical Conditions with Psychiatric Manifestations"
"Recognition and Treatment of Depressive Reactions by Medical Practitioners"
"Treatment of Emotional States by the Medical Practitioner"

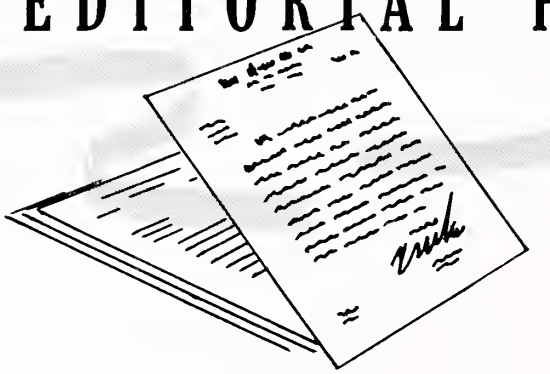
Gene L. Usdin, M.D., Chief
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Enclosed is my registration fee of $20 for the "Psychiatry for the Medical Practitioner" course to be given March 4-6, 1965, at the Jung Hotel. (Checks should be made payable to Touro Infirmary.)

Name .....

Address .....

EDITORIAL PAGE



During the past two years, this publication, along with many of the other state medical journals, has been faced with a large reduction in advertising plus increased cost of production. The editors and business managers have continually searched for methods to keep their journals on a sound financial footing.

Recently, our national advertising bureau informed your editor that many of the advertisers have requested that a "readership" survey be made by the member journals. It is hoped that a survey of the type shown on the opposite page will be of some help in convincing the advertisers of the impact that medical journals have on the physicians and pharmacists of our state.

If we are to continue to publish a journal, we need not only the cooperation of the advertiser, but also the full cooperation of you, our readers. Bearing this in mind, I respectfully request that you complete the survey and return it to the Journal Office as soon as possible.

R. E. Van Demark, M.D.
Editor

DOCTOR: WE URGENTLY NEED YOUR OPINION!

It is of considerable importance to your Journal that the following questionnaire be completed, removed from your journal and mailed to your state medical society as shown below. We urge you to take just a moment for this task, with the assurance that your effort will help us produce a better journal for you.

1. My chief professional interest is
   general practice ( ) or specialty .....

2. I rate the scientific papers in
   South Dakota Journal of Medicine and Pharmacy as:
   ( ) Excellent ( ) Fair ( ) Poor

3. I read the **pharmaceutical** advertising in the journal:
   ( ) Regularly ( ) Sometimes ( ) Rarely

4. I have referred to the **local** advertising in the journal:
   ( ) Often ( ) Sometimes ( ) Never

5. Please give the name of **one** local service, firm or institution (professional or commercial) which you have referred to, or purchased from, as a result of seeing its advertising in your journal:

   .....

6. Please list the professional journals you read in order of preference. (You may show your opinion of your state medical journal by its position on this list.)

   1. ..... 4. .....

   2. ..... 5. .....

   3. ..... 6. .....

7. When examining your journal do you more often read papers by authors or from hospitals with which you are **personally** familiar, than articles from other sources? ( ) Yes ( ) No

8. What feature do you like best in your journal? .....

9. What do you like least? .....

10. What is missing that you would like added? .....

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NEWS • NOTES • • • BIRTHS • • • CHANGES • NEWS

Pop's Proverbs

Of the senses of mankind, "thinking" is the most important.

NEWS NOTES

J. Patrick Steele, M.D., President of the South Dakota State Medical Association, made his official visitation to the Huron District on November 18th. During that meeting, new officers for the coming year were elected. They include **David Buchanan, M.D.,** Huron, President; **James DeGeest, M.D.,** Miller, Vice-President; and **G. Huet, M.D.,** Huron, Secretary-Treasurer.

The district also elected their delegates and alternate delegates to the House of Delegates of the South Dakota State Medical Association.

The newly elected officers of the Sioux Valley Medical Association are: **C. J. McDonald, M.D.,** Sioux Falls, President; **H. E. Rudersdorf, M.D.,** Sioux City, Secretary; and **Karl Wegner, M.D.,** Sioux Falls, Treasurer.

* * *

The Aberdeen District Medical Society held their annual election of officers on December 2nd. The new officers are as follows:

President:
Carson Murdy, M.D.
Vice-President:
Paul V. Leon, M.D.
Secretary-Treasurer:
W. Taylor, M.D.
Councilor:
E. J. Perry, M.D.

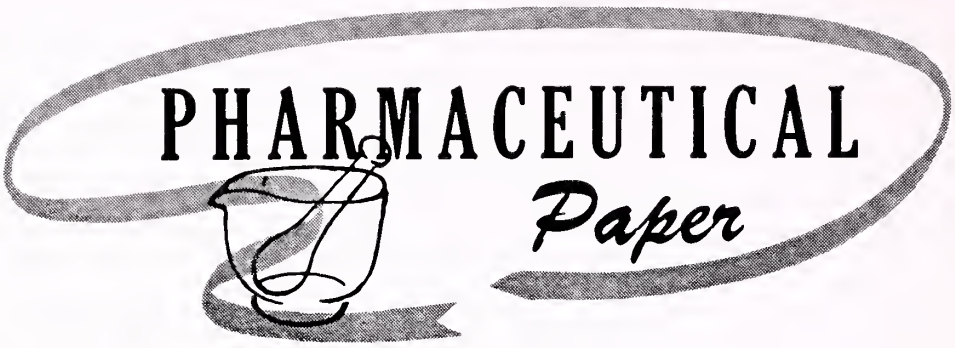
Cardiology Program Offered

A nine month tutorial program in Cardiology, September 15, 1965 to June 15, 1966, will be offered by the Institute for CardioPulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California. This will be an intensive program covering the field of cardiovascular diseases and is especially designed for the physician in private practice who wants an academic year of organized instruction with freedom from direct patient responsibility. For details, write: E. Grey Dimond, M.D., Institute for CardioPulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California.

PHARMACEUTICAL SECTION



GARY OMODT, PH.D.
EDITOR
College of Pharmacy
South Dakota State University
Brookings, South Dakota



HISTORY OF SYRINGES AND INJECTION THERAPY*

by
Philip H. Van Itallie**

Hippocrates is said to have poured water into a prepared animal bladder, inserted a reed as a cannula, sewed its base onto the bladder, inserted the tip of the reed into a body cavity to be flushed out, then squeezed on the bladder. This first form of the syringe remained in common use for almost two thousand years.

One of the elements of the modern syringe — the piston and cylinder principle — may have been used in Greece (before the Christian era in pumps) to blow air used in metal working, and was surely used in ancient Rome for pumping water. The credit for applying this principle to a device suitable for giving enemas and washing out other body cavities has been given to the late 15th century Italian, Marcus Gatinaria of Pavia; though the idea was suggested to him by a study of the writings of the Arabian physician, Avicenna, who lived five centuries earlier.

Gatinaria's syringe, or an improved form of it, was used by the French barber-surgeon Pare. Some modification of the same device was utilized in 1656 by the English architect, astronomer, and all-around scientist, Christopher Wren, who injected diverse fluids into the veins of dogs for the edification of curious celebrities. This was after William Harvey had demonstrated the circulation of the blood.

If we make allowance for a leaking piston and the lack of a hollow needle, what Wren used was the forerunner of today's syringe. He strapped a dog to a table, incised the thigh, wrapped a ligature around a large blood vessel, and anchored it with a curved, perforated brass plate. He then cut into the vessel, inserted the nozzle of his irrigating syringe, and proceeded to inject a solution of opium, after which the groggy dog could be untied. In later experiments Wren and others injected drugs calculated to produce vomiting or diarrhea, with the expected results.

For lack of a hollow needle, the first experimental injections were intravenous and not subcutaneous. They opened the way for infusion experiments on hapless convicted criminals, and later for transfusions of blood from one animal to another, from animals to men, and from men to men. The experiments were usually reported to be successful, and if the patient later died, this was not considered worth mentioning. Science had a crude tool to make injections, and if it was too crude to encourage more widespread use, that was no doubt a blessing in view of the ignorance of aseptic techniques that prevailed in that era.

Meanwhile, instrument makers, as metal-working techniques improved, made smaller and neater syringes. A very good one was introduced by the French surgeon Dominique Anel, who described it in the early 1700's as suitable for extracting fluids such as blood or pus from cavities or tissues by aspiration. Anel designed nozzles of many shapes and sizes, including a very thin curved one that could be inserted into the angle of the eye for injecting

*Presented to the History of Pharmacy Section of the American Pharmaceutical Association, August 6, 1964, New York City.

Editor, **Pulse of Pharmacy, Wyeth Laboratories, Philadelphia, Pa.

ophthalmic ointments. As late as 1887, the surgical and veterinary instrument catalog of J. H. Gemrig & Son, of Philadelphia, still applied the name of Anel to ear and eye syringes.

There is excellent reason for believing that the world's first hypodermic injections (of morphine) were made with such an Anel eye syringe, through an incision made into the skin with a lancet, in 1839, by two physicians associated with the New York Dispensary—Doctors Isaac Ebenezer Taylor (1812-1889) and James E. Washington, both pioneer obstetricians and gynecologists. The evidence for this, though admittedly insecure, came from a book published by Kane in 1880, **The Hypodermic Injection of Morphia.**

We have already pointed out that no one person can be said to have invented the syringe. It was not born all at one time. If we are interested in the first individual to inject a medication under the skin by any means whatever, then perhaps Doctors Taylor and Washington qualify. But if their claim is thrown out, the next two candidates are an Irishman, Francis Rynd, and a Scot, Alexander Wood.

If we wish to determine who made the first injection through a hollow needle, the choice would perhaps narrow down to Alexander Wood, but it depends on one's definition of a hollow needle, and on whether it has to be a good hollow needle. Many Frenchmen would nominate Charles-Gabriel Pravaz, if the question were phrased this way. But the Frenchman's claim would be open to debate.

Let us review the highlights and leave it to the audience to elect the winner. Francis Rynd of Meath Hospital, Dublin, in May, 1844, injected a solution of morphine and creosote subcutaneously for the treatment of sciatica. He used a device of his own design, made for him by the London surgical instrument maker Weiss. The instrument had no plunger and actually was not a syringe. The object of the instrument was to hold a cannula with a solid needle inside it. This cannula-needle assembly was driven into the skin. The solid needle was retracted by means of a spring device, leaving the cannula in the skin; then the medication was poured with an eye dropper through a hole in the wide portion of the cannula and was allowed to find its way as best it could by gravity into the skin. Mr. Rynd published his cases in the Dublin Medical Press of March 12, 1845, but didn't elaborate on his account until August 1861, having been stung into action by the claims for priority of Dr. Alexander Wood of Edinburgh. Dr. Wood

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made his injection in late 1853, using a hollow needle of sorts, attached to a little syringe made by Ferguson of London.

Only a broken fragment of the original glass Ferguson syringe remains, minus the needle, in the Edinburgh Museum, and today one can only wonder what the needle was like. In his first report (1855) Wood revealed that the needle was designed to inject a solution of iron perchloride into a nevus wart. Wood, however, decided to use the same device for injecting morphine under the skin to relieve the pain of a neuralgia in the neck and arm. In elaborating his report three years later in the **British Medical Journal,** Alexander Wood said he made his injection, not in 1853, but in 1843. Historians later debated whether this was a misprint in the **British Medical Journal,** or a dishonest attempt to establish priority over Rynd. The argument would become academic if one accepted the claims of Doctors Taylor and Washington of New York, but unfortunately neither of them ever mentioned the morphine injection of 1839 until 1870, and no one has been able to discover this 1870 journal except for Dr. Kane, the author of the book of 1880, **The Hypodermic Injection of Morphia.** If Doctors Taylor and Washington require any character references, they have them in Kane's book, where their claim for priority is backed by "Professor Lewis A. Sayre and others who saw these gentlemen carrying out the practice daily."

Another New Yorker credited with having introduced hypodermic medication in the United States was Dr. Fordyce Barker, a one-time president of the New York Academy of Medicine, who visited Edinburgh and returned with one of Wood's syringes. He first used it in New York in May, 1856.

The relative merits of the original Ferguson syringe used by Wood and the syringe designed by the Frenchman, Pravaz, is another moot question. We may choose to believe an eyewitness account of the French surgeon, Behier (who was familiar both with the Ferguson and the Pravaz syringes) in a French journal of 1859. He had this to say about the Ferguson syringe (or an early modification by Wood himself): "It has a glass body that is screwed onto a hollow steel needle, the extremity of which is fluted and sharpened to facilitate penetration of the subcutaneous tissue. The point of the cannula (as he called the needle) gets dull quickly and furthermore one cannot tell how much fluid one has injected."

In contrast with the Ferguson-Wood syringe, the model made for Pravaz by the French instrument maker, Charriere, received Behier's

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unqualified approval. At the risk of offending the supporters of Dr. Pravaz, it must be pointed out that his instrument had a great many disadvantages and actually was not designed to give hypodermic injections — neither did it have a hollow needle in the present sense of the word.

Pravaz was a French physician (1791-1853) specializing in orthopedic surgery. In the course of his career he became interested in devising a treatment for superficial arterial aneurysms. With this objective in mind, he experimented on horses at the veterinary school in Lyons. In his early attempts to destroy the aneurysms, he used an electric current introduced into the artery with a fine wire. When this did not produce the desired coagulation, he decided to inject a small amount of iron perchloride solution into the artery and he called upon the instrument maker, Charriere of Paris, to make a suitable syringe. In lieu of a needle, he employed a very long, thin cannula, inside which was an even thinner trocar. After having plunged the needle and trocar together into the artery of the horse, he withdrew the trocar, screwed the barrel of the filled syringe onto the hub of the cannula, and made his injection, not by pushing on the plunger, but by turning it with a screw-like motion. This was said to give the operator control over the amount of iron perchloride injected. There was considerable trouble with blood oozing out through the cannula and coagulating in it when it came into contact with the iron perchloride. Pravaz attempted to deal with this by attaching to the syringe a second cannula so fine that it could slide into the larger cannula inserted in the artery.

Whatever may have been Pravaz' results in his 1853 experiment on horses in Lyons, he died that same year before he ever had a chance to try his syringe on humans. Even then, the long cannula and trocar were not really designed for subcutaneous injections and the necessity for removing the trocar, and then attaching the syringe to make the injection, introduced complications likely to discourage many doctors. But the Pravaz syringe was a native product, and the cannula and trocar worked well in the hands of experienced physicians.

After the death of Pravaz, Charriere, with the advice of French physicians, gradually improved the Pravaz syringe, and though the resulting modifications bore less and less resemblance to the original syringe used by Pravaz on the horse, French syringes, even today, are known as Pravaz syringes, and a grateful France in 1953 erected a monument to his memory in his native town of Pont-de-Beauvoisin.

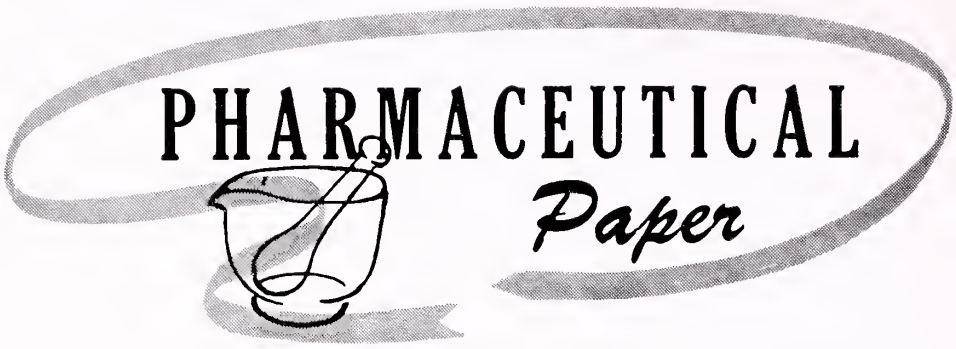
A quaint commentary in reverse English on the priority controversy between Wood and Pravaz appears in an editorial in the **British Medical Journal** in 1923, which that venerable journal will probably never live down. In 1858, the **British Medical Journal** reported Alexander Wood's "first" hypodermic injection made in 1853 — though it said 1843 (by mistake?). In 1923, the same **British Medical Journal** praised the French orthopedist Pravaz "best known as the inventor of the syringe with the hollow needle, which has since been known by his name." It refers to a French article which gave the credit for the first subcutaneous injection to a Scottish surgeon named Wood, "whom we are unable to identify." Thus the **British Medical Journal** denied their own countryman in favor of his French challenger.

Naturally the story of the hypodermic syringe did not remain lost in the mid-nineteenth century. The instrument has been improved over the years both in Europe and in the United States by numerous instrument makers. One of the more important changes was the invention of the all-glass syringe made about 1896 by Karl Schneider, instrument maker for H. Wulfing Luer of Paris. The manufacture of this syringe in the United States was taken over by Becton Dickinson, which has further perfected it in many respects.

The famous dental carpule syringe was developed by the American dentists Cook and Waite. In this device a cartridge containing local anesthetic plays the part of the barrel of an ordinary syringe.

One of the companies which became a part of Wyeth Laboratories in 1942, the Bartos Company, manufactured a line of allergens that was put up in cartridges very similar to those used in the carpule syringe.

Over the years Wyeth improved these cartridges and the syringe for holding them, and made them suitable for administering a complete range of medications. These cartridges, which have sterile needles permanently attached to them, are known as **Tubex.** Each cartridge needle combination is to be used only once and need never be sterilized. Since there is no chance for cross-contamination, the Tubex syringe helps eliminate the transmission of serum hepatitis.



THE MIRACLE OF MEDICAL MARKETING*

by

Ralph A. Sears**

May I take the occasion to tell you how happy I am to be here at this wonderful convention. You are to be complimented. This is one of the nicer conventions I have ever attended. I also wanted to say I enjoyed your banquet and program last night.

I am going to talk with you for the next few minutes about "The Miracle of Medical Marketing." Actually, each and every one of you in this room is a part of this miracle. You may or may not have thought of this as a miracle heretofore. But, I would like to call your attention to the fact that the marketing of medicinal agents in the United States today is actually a miracle as compared to the marketing of kindred products anyplace in the world. Thanks to our marketing ability, we were able to bring the Biblical prediction of life expectancy to the American people for the first time, some two or three years ago. It is just fine to have the finest pharmaceuticals in the world, but they would be utterly worthless were they not available with the concept of time and place that is so important in the manipulation of pharmaceuticals. At this point I would like to say a word or two about the few definitions that come across our consciousness as we go through the conducting of this miracle.

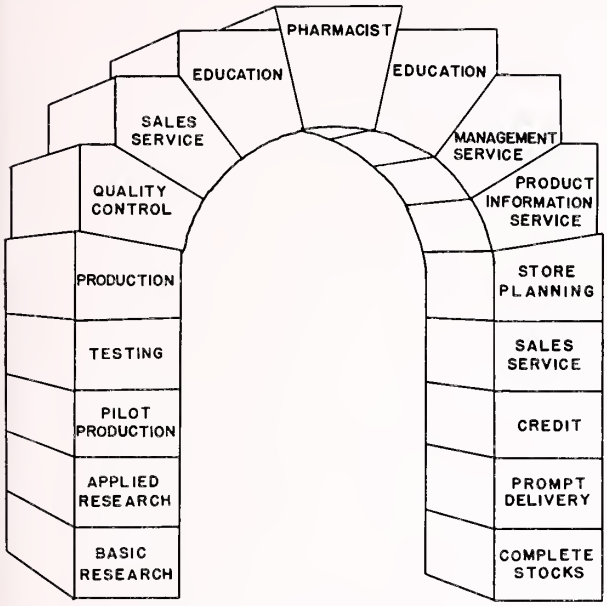
For instance, the word "expensive." Quite frequently we hear the word "expensive" used with regard to medication. I refer, of course, to prescription medication particularly. The only prescription medication that is expensive is that which is not **where** it is needed, **when** it is needed. Price becomes rather insignificant. The "expensive" medicine is the one that doesn't work or the one that isn't there when it is needed.

Now I would like to stop for just an instant here and digress to the physician. We, of course, as pharmacists work with the physician. I would like to give you my impression of that very wonderful fellow. The physician comes out of college no more schooled in basic salesmanship than the average pharmacist. We are highly schooled in the technical knowledge we need to practice our profession in back of the prescription department, but very poorly schooled, usually, with regard to the techniques that are used with regard to salesmanship when convincing our patrons that we are the pharmacist of choice. The physician is pretty much up against the same thing. I like to look at the physician as one of my patrons, the same as the customer who comes into my store or the

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*Presented at the 78th Annual Convention of the South Dakota Pharmaceutical Association, May, 1964, Mitchell, South Dakota.

**Director of the Pharmaceutical Department of the Kauffman-Lattimer Company of Columbus, Ohio and Parkersburg, West Virginia.



"Arch of Medical Marketing"

patron, if you will, with a prescription. The physician goes hand in hand with the patient on his journey to a longer and better life through the facilities that we provide for them as we conduct this medical marketing miracle. We do have a miracle today, but I would like, from this point on, to point to you folks the direction we must take if we are really to produce the miracle of the future in the 65-70's and 75's. For this job I have put a little diagram at your places at the tables.

I wish you would look at it with me as we study the marketing miracle that may well come about, if each of us, from this point on, will assume our full responsibility in the area in which we can best serve. Medical marketing is as much a science as any other kind of marketing. Marketing means, in toto, the movement of all goods from the point of manufacture to the point of ultimate use. All of the very facets of distribution, salesmanship, financial manipulation — anything else that involves the transfer of these goods from the point of manufacture — to the ultimate consumer — make up the science of marketing. Please believe me, I consider marketing just as much a science as the science of physics, astronomy, chemistry or any of the other learned doctrines to which we can put our minds. Marketing is a science which is even more involved — particularly when we consider the marketing of medicinals, because we have the problem of the mind of man involved in this. The fact that all of our patrons are, to a greater or lesser degree, **scared** when they come in with the demand for their medication magnifies the problem of marketing because we must use commiseration. We must use empathy. I use the word "empathy" rather than "sympathy." I believe we pharmacists, all, should study empathy where we can involve ourselves with the problems of our patrons with our minds rather than with our hearts. If we will consider this type of an approach to our future in the marketing of medicinal agents, I am sure we will accomplish a true miracle beyond our most fond dreams at the present time.

Going back to this arch I've drawn, I have drawn it as an arch because actually an arch is the strongest architectural form that can be used where we must have an opening. I would like to look at this arch as the pathway through which the people — all of the people — move hand-in-hand through our medicinal facilities. Can you visualize the person who is ill being led by the hand of the diagnostician through this arch? We will study the left leg of the arch first because this group, our manufacturers of pharmaceuticals, has come into its ascendancy as chemistry has taken the place of crude drugs in our medicinals. If you will notice the anchor block of the arch, it says "basic research." I am inclined to believe that we, as pharmacists, are very, very foolish to exploit the movement of any pharmaceutical element in this area that is not provided by a manufacturer with enough courage to ensure profit from which to support basic research. If we deny these manufacturers the profit from which to provide the research, I can assure you here and now that our children will have no better life than we have, and think where we would be today had not some manufacturers had the nerve to put their profits in research.

We move from "basic research" up the arch to "applied research" where we define this fantastic thing and then direct our effort to make it a remedial agent worthwhile. Then our manufacturers move from "applied research" on into "pilot production" where they make sure they can make it feasible. Then they go from "pilot production" into "testing." You are reading of all the involvements of the government agents in the certification of this testing. I was interested to know that when we tested Salk vaccine, our government agents came to Eli Lilly and Company to develop the technique through which they could test Lilly's vaccine. It

seemed a little redundant to me at the time, but that is the way it worked. Consequently, we held up six-months' dated vaccine for as much as three and four months and it only had a shelf life of two months by the time we were ready to put it out to the people.

After we go through our testing and find that the pharmaceutical is proper, fitting, and should be used by people, it moves into "production." Again, I might speak of the manufacturer in the next block who exercises the quality control that is necessary to keep the product in condition for people.

"Quality control" — I suggest that you not consider seriously any pharmaceuticals, regardless of who makes them, which are produced by a manufacturer who does not assure quality control in his own plant. You will be amazed at the number of people in our country who think the United States government tests every batch of medicine. It is amazing to me as I talk to people, that this is what they consider as common knowledge. We **all** know how untrue that is.

From "quality control" we move into "sales service." That is where the professional service representatives of the manufacturers and all the advertising and promoting efforts are concentrated into educating the physician to the desirability of using this fantastic new medicine regardless of what it may be.

That immediately locks into the stone of "education." The manufacturer must educate the user with regard to his new product because only he, the manufacturer, can tell all the details relative to this product.

With regard to the "leg" of the arch which is the manufacturer, we have covered that very briefly but I think adequately for the moment. Let us look at the "leg" of this arch which represents scientific distribution as an element of marketing. Notice the anchor block is "complete stock." We will define "complete stock" as a rather variable sort of thing, dependent upon the area. Here is the first point at which we must assure that we have proper communications. The practicing pharmacist in the community must keep his full-line service wholesaler advised as to what he wants in stock because he, in turn, is in direct contact with the physician who has been impressed by the manufacturer with the desirability of this drug. The wholesaler has no crystal ball. He can work with the manufacturer in great depth; however, he cannot pick community by community and ensure that each community is certified in adequate reserve stocks or in adequate breadth of stock in any given pharmaceutical.

Next we come to the "prompt delivery" block. There is no use in having stock unless we establish machinery through which we can provide prompt delivery. By prompt delivery I don't mean two or three deliveries a day because we would have to work more closely with our inventory control than that — on the retail level and on the wholesale level. "Prompt delivery" means adequate material to supply the needs of a given community promptly and efficiently and with a minimum number of invested dollars, thus to show maximum profitability and more complete service to the ultimate consumer.

Next comes "credit." A very important function in marketing — the use of money. Please believe me, ladies and gentlemen, I would much prefer to do business with a neighbor — someone only a few miles from me — than with someone in Philadelphia, in the event I had to have credit. There are very few of us who can go through this life without having an emergency occasionally and how nice it is to go to our friends with whom we have been doing business for years and say, "I can't discount this, I have to have 60 days." The fellow says: "Sure, sure, why not? You're a friend of mine." Please take this credit personally because credit is a very important thing. I think you should find it very important to know your banker. You don't want to go to California with your deposits for five per cent because you don't know too much about that lending institution or the borrowing institution in California.

Let's go on up to "sales service." You have your salesman who calls on you. In many instances we have telephone sales service in distributive science. Sales service which can instruct as well as sell. Remember, while the manufacturer is moving a commodity in commerce, your distributor is moving nothing more or less than service. The service is the only commodity that he has. It is just like yourselves, who are in retail business. Service is your only commodity because you can buy material any place — dozens of places — but probably not so well.

"Store planning" — you'll hear more about that this afternoon from the gentleman from McKesson & Robbins. Store planning, store organization, the fact that the store is alive and the fact that things are moving ahead are very important to your patrons as you create the impression with your patron that you are a progressive individual — you are not inclined to operate in the dark ages either with facilities or with therapeutic agents.

"Product information service" is next. Where else can you efficiently receive product information service from literally hundreds and hundreds of manufacturers concentrated in an easily read and easily digested brochure that constitutes a continuing education in this field?

Then we go to "management service." Within your primary distributor you have gentlemen who are highly skilled in management experiences. Management experiences that we who have graduated from pharmacy have no way of getting other than going to a college of business administration and we couldn't do that and still practice pharmacy. So let us use these fellows who have this experience. Use it intelligently for your own benefit and the benefit of your patrons.

Then we have within this wholesale "leg" of the arch, the educational function which includes along with management service any kind of consulting service. You can sit down and talk with your friends — talk about any problems, any progress that you look forward to, what is happening in the market place — because they are in contact with a greater breadth of happenings and events in the country than the practitioner of pharmacy on the community level could possibly be and still practice his profession on the community level.

Let's look at the top block. The word is "pharmacist," not "pharmacy." Right here is where I would like to make a very potent point. The service of a pharmacist to his patron is a very personal sort of thing. I have tried this many times in the past several months as I talk with people. I will say: "Who is your pharmacist?" and they name a store. I say, "I'm sorry, you didn't understand me, I said 'Who is your pharmacist — do you know him by name?' Actually, you, as the patron of a drug store or pharmacy, will find it an advantage to know that pharmacist personally." I believe the most grave public health problem we have in the United States today is the fact that all too few families have a private family physician and a private family pharmacist. The two people who are trained, educated and licensed to guide them in their health problems and the only two people who can do it intelligently: the physician and the pharmacist. The pharmacist is the keystone of this arch of distribution. Just a few weeks ago I had an occasion to talk to a group and I surrounded the tables with a simple little pointed dixie cup and asked them to hold it like they were going to drink out of it and imagine that the top of that cup in 1963 had just received $3 billion worth of professionally promoted pharmaceuticals. I can't appreciate $3 billion. I was just raised as a poor boy — it sounds like the mileage distance to the moon. But, say $3 billion worth of pharmaceuticals is poured into this cup in one year. Now, look at the point that you are holding the cup by and you'll find that every one of the drips and dribbles of that $3 billion meet the ultimate consumer through one profession and that is the profession of pharmacy. That is by law — that is **not** "if you wish," but that is by "a must." All of the professionally marketed pharmaceuticals must reach the ultimate consumer through the profession of pharmacy — one at a time — which brings me to this next point.

The responsibility of the practicing pharmacist in the community is tremendous. He is the only one who can guide the people in the community in the proper utilization of medicine. It is only the pharmacist who can guide the physician in the proper utilization of medicine. Not too many weeks ago we lost a very wonderful drug called "Parnate." Hundreds of thousands of people were taking Parnate and in this age of stress we need Parnate — something to keep us a little calm and cool. We lost it because a few people had died from the misuse of the drug — and I can be quoted. The misuse of the drug by the practitioners who were responsible for the proper use of it. The package enclosure says very concisely that the "initial dose must be two tablets a day." How many times have we seen prescriptions for four tablets a day because the physicians are just like the people in the street, if two are good, four will be twice as good.

Do you know we stand a good chance of losing a product by Abbott Company called Eutonyl? Eutonyl, an anti-hypertensive, is a mood elevator. Why are we going to lose it? Because the fine print on the package enclosure says it must **not** be taken with certain types of drugs. It must not be taken if you eat cheese or drink fermented beer or wine because some people can automatically go into a situation of fatal hypertension. Who in the world is going to help them? Who is going to keep them away from the self-service, anti-histaminic racks if they know they are on Eutonyl? Pharmacists, please believe me, we have a terrific future ahead of us if we will only take our proper place in the scheme of things and make like the professional people we are and depend upon the manufacturers to produce the goods and depend on the distributors to distribute the goods. And mark you, as you look at this arch I am talking about, get out of the other guy's back yard and take care of your own business. Take care of your own business in the better interest of all of the people — of all of the people, you are educated, licensed, and dedicated to serve and I will say the same thing to the wholesalers. Get out of the manufacturing business and I'll say the same thing to the manufacturers — get out of the wholesaling business. You can't distribute to 200 million people — you'll only make lumpy mashed potatoes and nobody likes lumpy mashed potatoes. What we want is a great amalgamation of an even coating of paint of these fine pharmaceuticals across the width and breadth of the United States through which to justify existence of professional people.

Remember, be good to people because I am only one, and all the rest of them are people.

I am going to show you what happens when you get two of these things so close to your eyes that you can't see people. And all too frequently in this business and many other businesses with which I have been remotely connected, I see this happen. I am going to show you just how ridiculous you can look when you get two of these things so close to your eyes that you couldn't even find the way out of the room. (At this point Mr. Sears put on a pair of glasses with two silver dollars glued to the lens.)

(Continued on Page 46)

Hygroton®
brand of chlorthalidone
the long-acting diuretic

Indications
Many types of edema involving retention of salt and water.
Contraindications
Hypersensitivity, and most cases of severe renal or hepatic disease.
Precautions
Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects
Constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, leukopenia, muscle cramps, nausea, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage
One tablet (100 mg.) daily with breakfast.
Availability
Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York



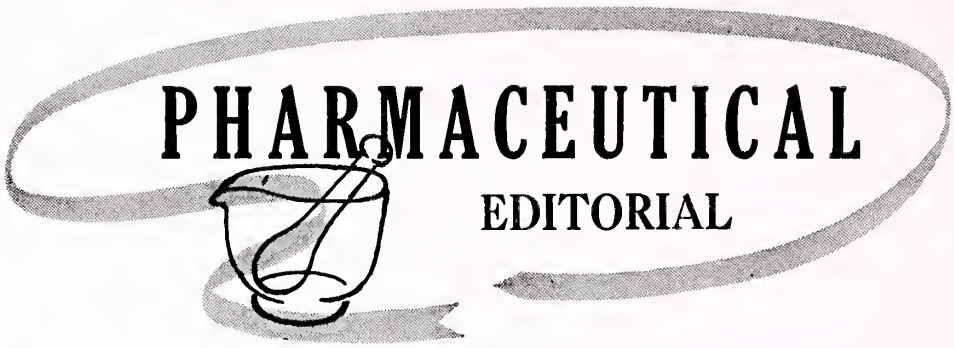
How does Hygroton®
brand of chlorthalidone
stack up against other diuretics?

Not very high. In terms of one week's therapy, that is. The usual dosage is just one tablet per day. Very often, the dosage is even lower. So a week's therapy doesn't amount to much.

That's why it's nice to work with Hygroton®, brand of chlorthalidone. You have fewer tablets to prescribe. Your patients have fewer tablets to take. And fewer to pay for.

For sheer diuretic effectiveness, choose Hygroton®, brand of chlorthalidone. It generally promotes more natruresis per tablet than the thiazides. We'll stack it up against any diuretic.

Geigy



THE RIGHT NOT TO KNOW

Should the physician direct the pharmacist to routinely place the name of the prescribed medication on the prescription label unless otherwise specified? Would this practice be an improvement over the presently accepted policy of **not** placing the name of the medication on the label unless so directed by the physician? We sincerely believe that the only purpose that would be served by such a procedure would be to satisfy the curiosity of the physician's patient relative to what was prescribed for him. With the increasing number of articles about drugs, the effects of drugs, the prices of drugs, etc. in many magazines commonly found about the home, there follows an increased desire to know about and discuss that which is read. This is especially true when it pertains to one's own prescription. However, simply satisfying the patient's curiosity is not sufficient reason for placing the name of the drug on the label when one considers the harm that may result because of the following reasons (Nos. 1-6 appeared in an editorial in the **American Professional Pharmacist,** November 1964):

No. 1: The physician arrives at a proper diagnosis via a very complex procedure that earns him the respect of his patients. This complex procedure is **oversimplified** when it is reduced to merely the name of the drug on the label.

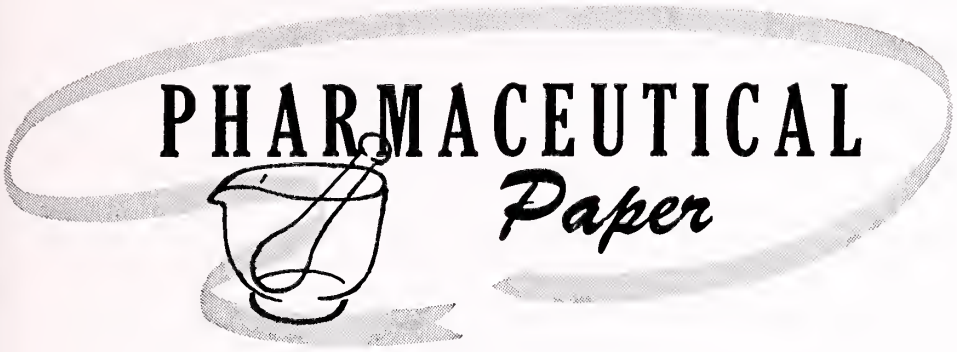
No. 2: Newspapers and magazines are loaded with often-exaggerated reports on adverse drug reactions and toxicity, causing our present drug hysteria. These reports mention the names of drugs. For example, if millions of users of Parnate and their families had recently read the exaggerated reports about the drug in the newspapers, they would have become unduly alarmed — if the name of this valuable drug had appeared on the Rx labels. The same applies to the millions of Enovid users and their families, when the public press **erroneously** linked the drug to cancer in humans.

No. 3: When a patient knows the name of a drug, he or she can put pressure on the physician. For example, two women — both patients of a drug-name-on-the-label MD — brought in Rxs at about the same time to a pharmacy in Illinois. One inquired of the other: "What did Dr. X prescribe for you?" Upon hearing the drug name, the inquirer urged: "Don't take it. It did me no good." The other lady then phoned the doctor and urged him to prescribe another drug!

No. 4: Even physicians who favor placing the drug name on the label often say there are exceptions to this rule — conditions under which the drug name should **not** be on the label. When a physician makes such an exception, the patient may say to himself: "I wonder if I have a serious disease, like cancer?" . . . or "Is the doctor giving me a barbiturate or a narcotic?"

No. 5: When a patient knows the name of a drug, it often leads to self-medication and to patient-prescribing for others. If the drug happens to be a "prescription only" drug and the

(Continued on Page 46)



HOW PHARMACISTS CAN PROTECT THE PUBLIC FROM DANGER*

by

David R. Uran**

This year, in the United States alone, Americans will spend nearly two billion dollars for medications which require no prescriptions or physician advice to purchase. Next year the total will be at least 100 million dollars more. Exact statistics are not available for other nations, but the amounts are also increasing. Name almost any ailment, and medication can be bought to treat it. You can buy tablets to make you sleep or keep you awake. You can get pain killers, tension relievers, or a remedy for any part of the body from head to toes.

People have always attempted to secure relief without going to a physician until home treatments failed. But, medical knowledge was so limited in the past that it didn't make too much difference. Few drugs were available which could produce a positive result. And, even a placebo, an inert or innocuous medication, has been proved by research to have a beneficial effect on some nervous people who are predisposed to believe they will be helped.

Modern research has tremendously increased our knowledge of the cause and treatment of sickness. We now have more potent and synthetic drugs which can cure or make almost every ailment easier to live with. But, to benefit most, the diagnosis and treatment must occur before the disease has obtained an opportunity to weaken the body beyond help.

Self-treatment remedies can give some relief to pains, aches, and other discomforts which often may be the body's warning of a serious problem. But, people who are continuously taking them may be masking symptoms of a disease that may become incurable. To illustrate the dangers of continuous self-medication, almost everybody believes the enormous quantities of indigestion remedies being sold cannot be harmful to the public. Certainly their ingredients have almost no fatal dose. But, indigestion is not a disease. It consists of pains or discomforts accompanied by either nausea, gas belching, vomiting or heart burn. Indigestion is usually a temporary condition due to a nervous reaction or something eaten. For this condition, the average indigestion remedy gives some relief and the user feels better more quickly than if no medication were taken.

Unfortunately, the same symptoms which influence people to think they have indigestion may be caused by —

1. A gastric or duodenal ulcer.
2. A gall bladder or pancreas disease.
3. A remote sign of a diaphragm, liver or brain disorder.
4. A reaction from antibiotic, hormone or tranquilizer medication.
5. Pelvic organ disorders.
6. The first symptom of a coronary attack.

*Presented at the Pan American Congress of Pharmacy and Biochemistry, December, 1963, Mexico City, Mexico.

**President, Ethical Drug Advertising Company, Atlanta, Georgia.

7. Practically any serious or systemic disease, including cancer or tuberculosis.

There is no doubt about the fact that, any person who year after year or even day after day is treating himself with an indigestion remedy, is also possibly masking the warning symptoms of a serious condition and delaying the proper treatment needed for complete relief. People who are continuously taking headache and pain remedies may also be ignoring their body's cry for help against an invading virus infection or a serious organic problem. Any person who night after night is taking the so called "so safe, no prescription is needed" sleeping remedies, may also be masking a condition that may shorten his life.

It is of course impractical for the average person to consult a physician at the beginning of every ailment, even though common sense indicates it would be wiser to do so. The medicine shows of the past now have been replaced by a tremendous number of ads of the televisions, radios, newspapers, and direct mail sellers. In this enlightened age, despite educational medical programs, more people are mis-using self-medication than ever before.

It is a pharmacist's professional obligation to protect the people whom he serves from any possible harm. If it were economically possible for all pharmacists to discontinue the over-the-counter sale of self-treatment remedies, an overwhelming majority would be delighted to follow this practice. Since pharmacies must presently continue to sell non-prescription medicines, it is fortunate that pharmacists have the knowledge to properly guide all purchasers. If they used that knowledge to protect the public, people would not buy medicines elsewhere.

At every opportunity, the necessary cautions to be observed when taking self-treatment remedies should be explained to customers. The warnings users seldom obey, which are printed on the labels to protect them, must be read to them to make certain the product is safe for them to take. Diabetics should be reminded about remedies having sugar. People with pains in or around the stomach, who wish to purchase a laxative, should be told about the possibility of an appendix complication. Customers asking for sore throat medicines should be warned about the danger of a strep infection. People with cuts or bruises should be told about a possible tetanus.

The most important words every pharmacist should say to every customer who has purchased a self-treatment remedy are, "This is a product that should help you. But, if relief does not come soon, don't delay. Go to a physician who can find out the cause of your trouble and prescribe a medicine that will help you before your trouble becomes more difficult to cure."

And, every pharmacist should consider it his duty to observe which customers are repeatedly buying medicines to treat the same ailment. He should warn them that the symptomatic relief they are getting may be doing them permanent harm and advise them to consult a physician before it is too late.

MEDICAL MARKETING—

(Continued from Page 42)

With that, I want to tell you again how much I enjoyed being here. I wish you the best of success with your Association, your profession and with the people you are dedicated to serve. I know that each and every one of the citizens of South Dakota will be better off by virtue of the fact that you have met here, pooled your desires and are willing to move on into whatever the future may bring in a more concise and methodical manner.

EDITORIAL—

(Continued from Page 44)

pharmacist says that he cannot supply it without specific permission from the doctor, some people may suspect physician-pharmacist collusion.

No. 6: Patients who know the names of the drugs prescribed for them will price-shop — by asking for the drug by name. With all the look-alike and sound-alike drug names—coupled with the many forms and dosage strengths — the patient may get the wrong drug or the wrong strength.

No. 7: Patients would be encouraged to save all unused portions of prescriptions and set up their own little "drug stores." Some of the drugs might be out-dated and useless. Perhaps there is a bit of "doctor" in all of us — it's fun to self-prescribe.

To sum up the situation: The physician should retain full control of therapy in the interest of public health. When he specifies that the name of the drug be placed **automatically** on the Rx label, he tends to lose control of that therapy. This is not in the interest of an effective physician-patient-pharmacist relationship.

Your patients will say "The Pain Is Gone" when you prescribe

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PHARMACEUTICAL NEWS



NATIONAL AWARD WINNER

Keith McKay (right), owner and registered pharmacist of McKay Drug, Sturgis, South Dakota, receives a $500 check as one of the national winners in the recent Contac "Extra Dividend Sweepstakes." Presenting the check is **Robert L. Lind,** representing Menley & James Laboratories, Philadelphia, Pa., makers of the proprietary product. Mr. McKay won the money in competition with thousands of pharmacists who submitted entries on why they recommend Contac as "pharmacy's best cold medication."

KAPPA PSI CONCLAVE

Richard Schugel, Grand Rapids, Minnesota, was elected Province VIII historian of Kappa Psi, pharmaceutical fraternity, at its annual conclave in Minneapolis.

Province VIII includes chapters at the University of Minnesota, Iowa State University, Drake University, North Dakota State University, and South Dakota State University.

Schugel was a South Dakota State delegate at the conclave. Other State delegates included **James Nelson,** Forest City, Iowa; **Clayton Pike,** Austin, Minn.; **Richard Soukup,** Tyndall; **Richard Kingdon,** Huron; **Brent Keil,** Lakota, Iowa; **Gregory McCullough,** Groton; **Merlin Snyder,** Ortonville, Minn.; **Stephen Hoy,** Hot Springs; **Dwayne Plender,** Orange City, Iowa; **Derald Shaw,** Faulkton; **Thomas Ehrhardt,** Milwaukee, Wis., and **Melvin Henrichsen,** Brookings.

NEW NATIONAL FORMULARY MAY BECOME COLLECTOR'S ITEM

Formularies and pharmacopeias are not written to be "best sellers" or collector's items. They are normally accepted for what they are — books of legal standards for drugs.

The new National Formulary, Twelfth Edition, to be published in January, 1965, however, is not just another revised, up-dated edition of a book containing monographs on drugs, chemicals, and preparations. The book is history-making by being the first edition of this official compendium to include drug and chemical entries solely on the basis of their "therapeutic merit" rather than on the previously accepted "extent of use" standard.

With adoption of this single criterion, the revisions in the forthcoming NF XII climax a virtually complete transition in the character of the National Formulary over the past decade and make all previous editions obsolete.

A valuable **Dosage-Posology Handbook** will be introduced with the new NF XII. Written and compiled by **Harry C. Shirkey,** B.S. (Pharm.), M.D., F.A.A.P., the new handbook contains much information which has not been generally available to pharmacists and fulfills a real need not only to pharmacists but to physicians, dentists, nurses, and other members of the health professions.

The Dosage-Posology Handbook is intended as a guide for physicians in ascertaining an average or generally recognized dose for children and infants, and also for pharmacists to confirm prescriptions calling for pediatric dosages. The handbook includes a complete table for quick, easy reference.

Selling separately for $2.50, the new handbook will be included at no extra charge with each copy of the NF XII, ordered prior to April 1, 1965.



LOMOTIL®

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride . . . . . 2.5 mg.
(Warning: May be habit forming)
atropine sulfate . . . . . 0.025 mg.

- lowers motility promptly
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- stops diarrhea promptly

Lomotil fulfills the first order of treatment in most patients with diarrhea — prompt symptomatic control.

Pending discovery of the cause, early cessation of diarrhea is almost always urgently indicated. Prompt symptomatic control averts distress, dehydration and, frequently, severe exhaustion.

Both experimental and clinical evidence indicates that Lomotil exerts such control efficiently, safely and with maximal promptness.

dosage:

The recommended initial *adult* dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is controlled. Maintenance dosage may be as low as two tablets daily. *Children's* daily dosage (in divided doses) varies from 3 mg. for a child of 3 to 6 months, to 10 mg. for one 8 to 12 years of age.

cautions and side effects:

Lomotil is an exempt narcotic; its abuse liability is low and comparable to that of codeine. Recommended dosages should not be exceeded. Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

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...is just for the sneeze

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Each layered tablet contains:

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To relieve the aches, pains, fever and respiratory congestion of the common cold, flu or grippe with one product ...specify 'Emprazil'.

Caution: While pseudoephedrine is virtually without pressor effect in normotensive patients, it should be used with caution in hypertension. Also, while chlorcyclizine has a low incidence of antihistaminic drowsiness, the usual precautions should be observed.

Supplied: Bottles of 100 and 1000.

Also available with codeine—on prescription only—as **'EMPRAZIL-C'® tablets**

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PUBLISHED MONTHLY BY THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
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V.18, #2

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*Roseman, E.: *Neurology* **11**:912, 1961. 33664

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THE SOUTH DAKOTA

JOURNAL OF MEDICINE

AND

PHARMACY

**JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
THE SOUTH DAKOTA PHARMACEUTICAL ASSOCIATION AND
THE SIOUX VALLEY MEDICAL ASSOCIATION**

Volume XVIII **February, 1965** **Number 2**

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Entered as second-class matter January 22, 1948 at the post office at Sioux Falls, South Dakota under the act of August 24, 1912

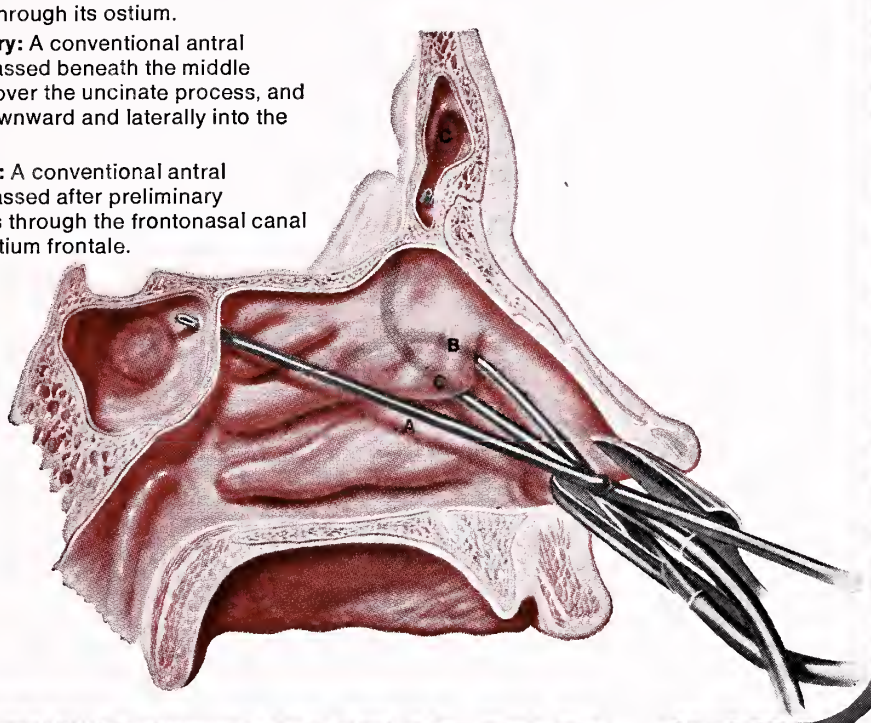
Published monthly by the South Dakota Medical Association, Publication Office
711 North Lake Avenue, Sioux Falls, South Dakota 57104

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Sagittal anatomical section of nasal cavity showing approach for probing or irrigation by cannulas.

A—Sphenoid: A sphenoid cannula (under 13.5 cm.) passed around the middle and superior turbinates to the anterior wall of the sinus through its ostium.

B—Maxillary: A conventional antral cannula passed beneath the middle turbinate, over the uncinate process, and rotated downward and laterally into the ostium.

C—Frontal: A conventional antral cannula passed after preliminary maneuvers through the frontonasal canal into the ostium frontale.



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Before complications arise in colds and sinusitis, Neo-Synephrine solutions and sprays reduce nasal turgescence on contact — to promote essential aeration and drainage. Turbinates shrink, sinus ostia open and drainage is freed. Relief is instant and the threat of complications is lessened.

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*Reed, G. F.: Sinusitis, New England J. Med. 267:402, Aug. 23, 1962.

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Volume XVIII **February, 1965** **Number 2**

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Of 425 patients with confirmed G.I. infections... 387 or 91.1% were treated successfully with Signemycin®

Note:
Loughlin and co-workers* achieved cure (absence of parasites) in all 100 of their patients with *chronic amebic colitis*. Feces became negative in all within the planned ten-day period of Signemycin administration. Upon re-examination of the feces six weeks later, the offending pathogen *(E. histolytica)* had reappeared in only 7 cases.

*Loughlin, E. H. et al.: Antibiot. Med. 7:739, Dec., 1960.

Condition	No. of Patients	No. Responded to Signemycin
Amebiasis	237	222
Cholecystitis and cholangitis	105	97
Enteritis	41	31
Peritonitis	15	14
Various, including pancreatitis, appendicitis and colitis	27	23
Totals	425	387 (91.1%)

consistently effective...often when others fail

Signemycin®

tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg. capsules (250 mg.)

Also available as Syrup, Pediatric Drops, and half-strength Capsules

Brief Summary and Bibliography follow.

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in maintenance therapy...

a working analgesic for the active arthritic

ARTHRALGEN®

Each tablet contains:

Salicylamide	250 mg.
Acetaminophen	250 mg.
Ascorbic acid (Vitamin C)	25 mg.

a working analgesic for the active arthritic

—rapidly relieves early morning stiffness and arthritic pain. It promises a quicker response in most patients because its analgesic ingredients need no metabolic conversion before they act. As a combination of two prominent analgesic drugs, Arthralgen can often establish smoother, more complete pain relief because it synergistically produces more efficient analgesia on lower dosage levels of each.

two proven pain relievers

Arthralgen combines two better-tolerated, time-tested analgesics, acetaminophen and salicylamide, into a pharmacologically sound and therapeutically effective formulation. As Arthralgen, it penetrates tissues promptly and relieves pain rapidly with less likelihood of gastric irritation than aspirin.

sodium-free

Arthralgen contains no sodium. Therefore, it is often a safer and more suitable analgesic for use in the long-term treatments of arthritic patients who have other conditions which require sodium restriction.[1]

ARTHRALGEN®-PR (Arthralgen with prednisone)

Each tablet contains:

Salicylamide	250 mg.
Acetaminophen	250 mg.
Ascorbic acid (Vitamin C)	25 mg.
Prednisone	1 mg.

To help provide dosage flexibility in patients who require steroids, the basic Arthralgen formula is also available combined with prednisone as Arthralgen-PR. Prednisone is favored as the more advantageous steroid for use in Arthralgen-PR because it shows less tendency toward sodium retention, potassium excretion, and steroid-induced hypertension than that which often accompanies the use of cortisone and ACTH.[2]

A. H. ROBINS COMPANY, INCORPORATED/RICHMOND, VIRGINIA

BRIEF SUMMARY

Arthralgen and Arthralgen-PR are indicated in the management of rheumatoid arthritis, acute gouty arthritis, rheumatoid spondylitis, osteoarthritis, bursitis, fibrositis, and neuritis. Arthralgen may be used for analgesia in colds, flu, and various myalgias.

DOSAGE: One or two tablets four times a day. After remission of symptoms dosage should be reduced to the minimum maintenance level.

SIDE EFFECTS: Nausea, GI upset, or mild salicylism may rarely occur. Symptoms of hypercorticoidism dictate reduction of dosage of Arthralgen-PR.

PRECAUTION: Reduction in dosage of Arthralgen-PR given over a long period should be gradual, never abrupt.

CONTRAINDICATIONS: Hypersensitivity to any ingredient.

As with any drug containing prednisone, Arthralgen-PR is contraindicated, or should be administered only with care, to patients with peptic ulcer, tuberculosis, nephritis, diabetes mellitus, acute psychoses, Cushing's syndrome (or Cushing's disease), overwhelming spreading (systemic) infection, or predisposition to thrombophlebitis.

Arthralgen-PR is generally contraindicated in patients with uremia and viral infections, including poliomyelitis, vaccinia, ocular herpes simplex, and fungus infections of the eye. It is also contraindicated in patients with chicken pox or susceptible persons exposed to it.

SUPPLY: Arthralgen (white, scored) and Arthralgen-PR (yellow, scored) tablets are available in bottles of 100 and 500.

REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953. 2. Cohen, et al.: J.A.M.A., 165:225, 1957.



Of 748 patients with confirmed G.U. infections... 684 or 91.4% were treated successfully with Signemycin®

Note:
The efficacy of Signemycin was shown in a study of nongonococcal urethritis involving over 1600 patients.* A comparison of the cure rates of sixteen antibiotic and chemotherapeutic agents revealed that Signemycin had the highest incidence of successful response. One hundred and six patients were treated, of which 82 were followed, with cures in 70.

*Willcox, R. R. and Rosedale, N.: Brit. J. Vener. Dis. 38:19, Mar., 1962.

Condition	No. of Patients	No. Responded to Signemycin
Cystitis	29	25
Pyonephritis	30	28
Pyelocystitis	119	112
Prostatitis	14	13
Gonorrhea	66	64
Lymphogranuloma venereum	96	96
Syphilis	31	31
Urethritis, nonspecific	149	131
Various, including infections seen with impaired urinary flow or lithiasis	214	184
Totals	748	684 (91.4%)

consistently effective...often when others fail

Signemycin®

tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg. capsules (250 mg.)

Also available as Syrup, Pediatric Drops, and half-strength Capsules

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SIGNEMYCIN®

Side Effects: Glossitis and allergic reactions, as well as severe anaphylactoid reactions, have been reported as rare side effects. Should significant reaction or idiosyncrasy occur, discontinue medication and institute countermeasures. Use of tetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of developing teeth. Reduce usual oral dosage and consider serum level determinations in patients with impaired renal function to prevent possible liver toxicity due to excessive accumulation of antibiotic in the serum.

Precautions: Overgrowth of nonsusceptible organisms may occur. In such cases, discontinue medication and institute appropriate specific therapy as indicated by susceptibility testing. Aluminum hydroxide gel given with antibiotics has been shown to decrease their absorption and is contraindicated. The coloring agents used in Signemycin Syrup and Pediatric Drops may produce red discoloration of stools.

Triacetyloleandomycin, a constituent of Signemycin, administered to adults in daily oral doses of 1.0 Gm. (3 Gm. Signemycin) for periods of more than ten days may produce hepatic dysfunction and jaundice. In the rare patient who requires this high dosage level of Signemycin initially, liver function should be carefully followed and dosage should be reduced, as promptly as possible, to the usual recommended range of 1.0 to 2.0 Gm. per day. Therefore, Signemycin is recommended primarily for the treatment of acute or severe infections, with treatment restricted to a ten-day period. If clinical judgment dictates continuation of therapy beyond ten days, serial monitoring of the liver profile should be carried out, including BSP, transaminase, and cephalin flocculation tests. Changes observed in liver function were reversible following discontinuation of the drug.

Formulas: Capsules: 250 mg. Signemycin (167 mg. tetracycline HCl and 83 mg. oleandomycin as triacetyloleandomycin).

Capsules: 125 mg. Signemycin (83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin).

Syrup: 125 mg. Signemycin (tetracycline equivalent to 83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin) per 5 cc.

Pediatric Drops: 100 mg. Signemycin (tetracycline equivalent to 67 mg. tetracycline HCl and 33 mg. oleandomycin as triacetyloleandomycin) per cc.

More detailed professional information available on request.

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Of 5,057 patients with confirmed infections of all body systems... 4,731 or 93.5% were treated successfully with Signemycin®

Note:

The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87] In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	No. Responded To Signemycin
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

consistently effective...often when others fail

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tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg. capsules (250 mg.)

Also available as Syrup, Pediatric Drops, and half-strength Capsules

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Your patient doesn't have to be in the Masters to get sprains and strains

Regardless of the etiology of muscle sprain or strain, 'SOMA' COMPOUND helps relieve pain and relax muscle. Patient comfort can be increased and recovery time shortened.

Soma® Compound

carisoprodol 200 mg., acetophenetidin 160 mg., caffeine 32 mg.

rational combination therapy for sprains and strains: relaxes muscle, relieves pain. Also available with ¼ gr. codeine as 'SOMA' COMPOUND with CODEINE: carisoprodol 200 mg., acetophenetidin 160 mg., caffeine 32 mg., codeine phosphate 16 mg. (Warning: may be habit-forming.)

BRIEF SUMMARY

'SOMA' COMPOUND; 'SOMA' COMPOUND plus CODEINE: carisoprodol, acetophenetidin, caffeine, codeine phosphate. *Warning: Codeine may be habit-forming.* **Indications:** 'Soma' Compound and 'Soma' Compound with Codeine are indicated for relief of pain and stiffness in traumatic, rheumatic and other similar conditions. **Contraindications:** Allergic or idiosyncratic reactions to carisoprodol or codeine. **Precautions:** *Acetophenetidin*—May damage the kidneys when used in large amounts or for long periods. *Codeine*—Should be used with caution in addiction-prone individuals. *Carisoprodol*—Like other central nervous system depressants, should be used with caution in patients with known propensity for taking excessive quantities of drugs and in patients with known sensitivity to compounds of similar chemical structure, e.g., meprobamate. **Side effects:** *Codeine*—Nausea, vomiting, constipation, and miosis. *Carisoprodol*—The only side effect reported with any frequency is drowsiness, usually on higher than recommended doses. One instance each of pancytopenia and leukopenia occurring when carisoprodol was administered with other drugs has been reported as has an instance of fixed drug eruption with carisoprodol and subsequent cross-reaction to meprobamate. Rare allergic reactions, usually mild, have included one case each of anaphylactoid reaction with mild shock and angioneurotic edema with respiratory difficulty, both reversed with appropriate therapy. Other rarely observed reactions have included dizziness, ataxia, agitation, increase in eosinophil count, and gastrointestinal symptoms. Massive overdosage may produce coma and/or mild shock and respiratory depression. **Dosage:** 'Soma' Compound and 'Soma' Compound with Codeine, one or two tablets three times daily and at bedtime. **Supplied:** 'Soma' Compound, orange tablets, each containing carisoprodol 200 mg., acetophenetidin 160 mg., and caffeine 32 mg. 'Soma' Compound with Codeine, white, lozenge-shaped tablets, each containing carisoprodol 200 mg., acetophenetidin 160 mg., caffeine 32 mg., and codeine phosphate 16 mg. Narcotic order form required. *Before prescribing, consult package circular.*

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IF YOU COULD BUT SEE PAIN

If you could see pain itself—not merely the reaction to pain—how much more accurately you could appraise it! How much better you could note the effectiveness with which codeine—in safe, low dosage—can confer full codeine benefits, when its action is potentiated by simple analgesics, and enhanced by phenobarbital! This is what PHENAPHEN WITH CODEINE provides, to enable you to "get the best out of codeine"



with maximal safety from the risk of incurring codeine side effects.

Contraindications: Hypersensitivity to any ingredient. Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use. Side effects: Side effects are uncommon—nausea, constipation and drowsiness have been reported.

A. H. ROBINS CO., INC., RICHMOND, VIRGINIA.

PHENAPHEN® WITH CODEINE

Provides the basic Phenaphen formula, plus Codeine phosphate (Warning: may be habit forming) in three strengths: ¼ gr. (Phenaphen No. 2); ½ gr. (Phenaphen No. 3); and 1 gr. (Phenaphen No. 4). Basic Phenaphen formula: Phenacetin (3 gr.) 194.0 mg.; Aspirin (2½ gr.) 162.0 mg.; Phenobarbital (¼ gr.) 16.2 mg. (Warning: may be habit forming); and Hyoscyamine sulfate 0.031 mg.


There's nothing like a vacation*
for relaxing stress-induced smooth muscle spasm

...nothing, that is, except the

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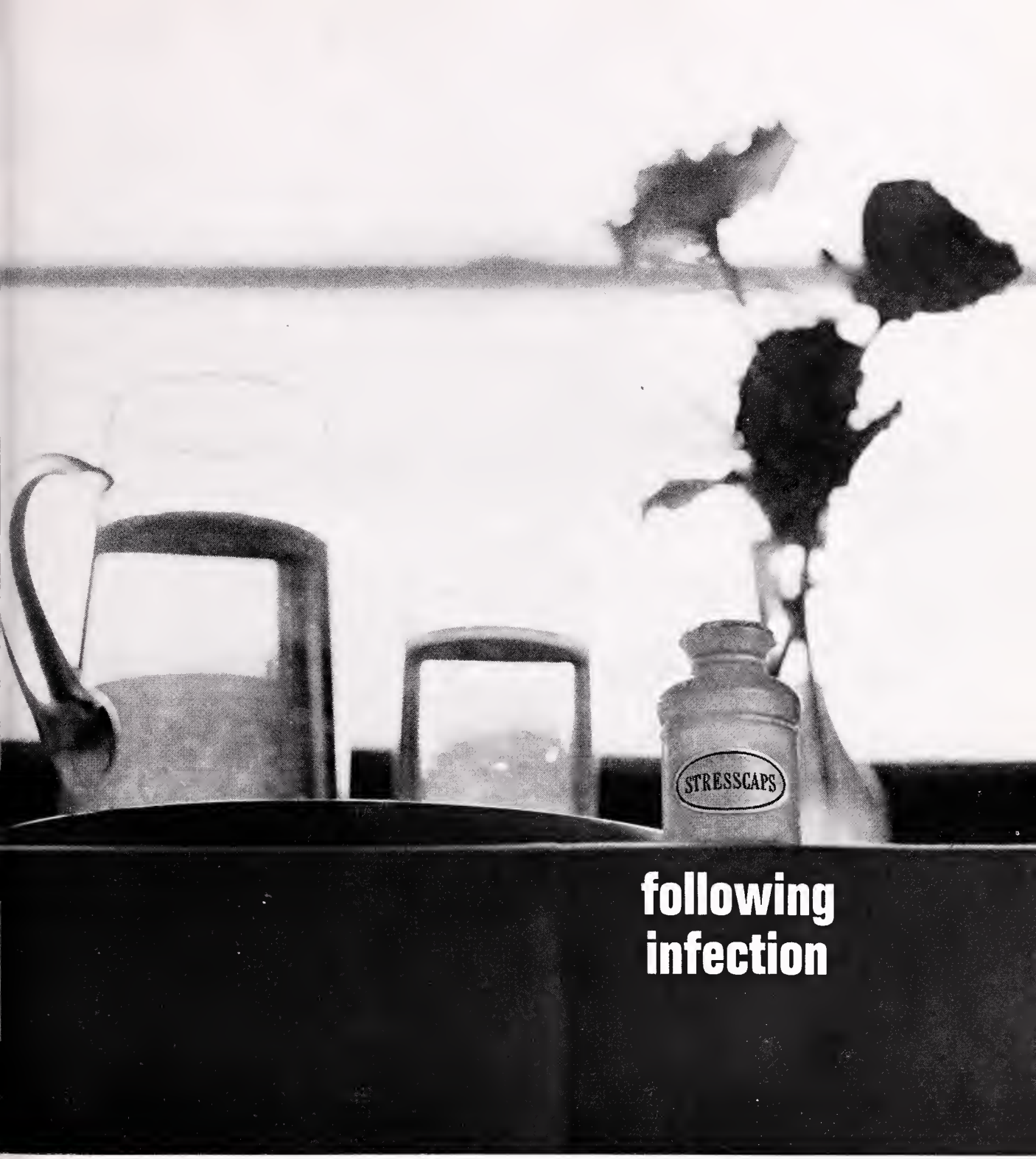
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1. Stoll, L. J.: The Use of Trifluoperazine ['Stelazine'] in General Practice, M. Press *243*:578 (June 29) 1960.

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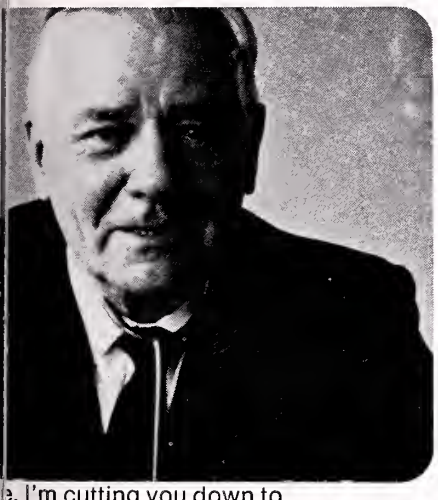
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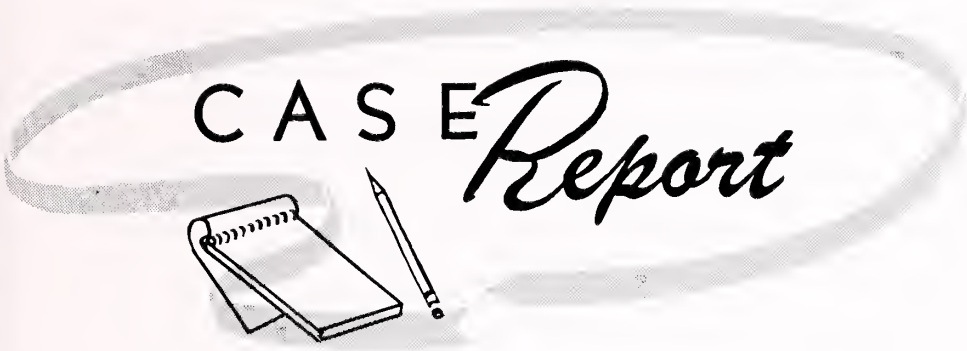
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Myoma-Erythrocytosis Syndrome, Presenting With Acute Hepatic Vein Thrombosis

By

Reuben J. Bareis, M.D.*

Introduction:

The association of polycythemia with large uterine fibroids is being reported with increasing frequency in the medical and gynecological literature. This case history is felt worthy of reporting since it presented in a unique and unusual manner — as an acute hepatic vein thrombosis. To my knowledge, a similar case has not been reported in the English literature.

Clinical Summary:

This 47 year old, married, nulliparous woman, who had been aware of a mass in the lower abdomen for a number of years, was admitted to St. John's Hospital on January 29, 1963, and expired February 4, 1963. Approximately two weeks before admission, she noted a gradual swelling of her abdomen. About four days before admission, she noted passage of dark urine and complained of mild, diffuse, upper abdominal discomfort, but not of severe pain. She became anorexic and vomited once the night before admission. There was no history of night sweats, temperature, weight loss, bleeding or clotting tendencies. Menstrual periods were essentially normal but the flow had become somewhat less than formerly. System review otherwise was completely negative. There were no symptoms such as headache, dizziness, pruritus or other symptoms of polycythemia.

Past history and family history were noncontributory. This lady had been perfectly well all of her life and had not seen a physician in fifteen years. There was no previous laboratory data for comparison.

Physical examination showed this to be a well-developed, well-nourished, white female, who did not seem to be dehydrated or in acute distress, but who appeared chronically ill. Her vital signs, including temperature, were within normal limits. She did not have plethora or physical findings that one might find with polycythemia vera. Positive physical findings were confined to the abdomen which was markedly distended with ascites. The liver was felt to be somewhat enlarged, non-tender, but was difficult to percuss accurately. There was a large, hard, irregular mass in the lower abdomen, which could be moved from side to side. There were a few superficial abdominal veins but no peripheral edema. The rest of the physical examination, including heart and lungs, was normal.

Laboratory data included a urinalysis with specific gravity of 1.021 and normal findings. There was a

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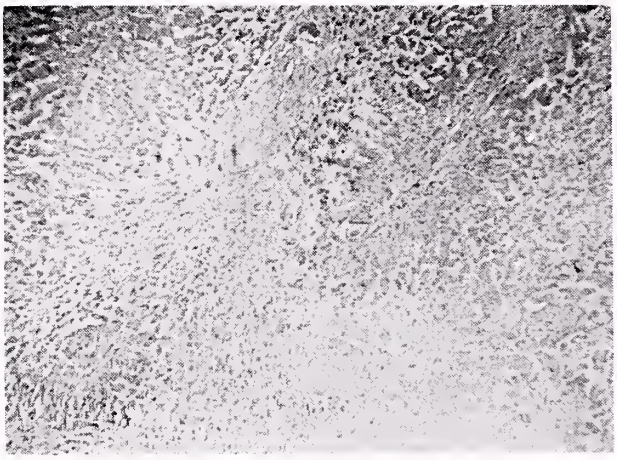


Figure I

Section of liver showing recent and organizing central vein thromboses. Note cellular necrosis. X 120.

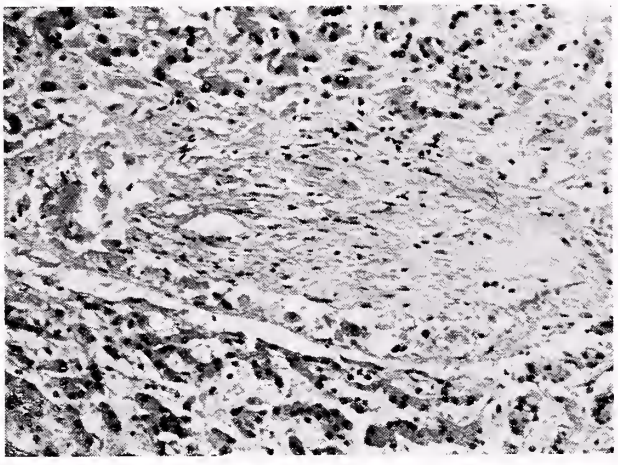


Figure II

Higher power of liver section showing an organizing clot. Note fibroblastic proliferation. X 400.

hemoglobin of 20 gms.; hematocrit of 70; white count of 28,000, with 88% segs., 6 non-filaments, 6 lymphocytes. The VDRL was negative. The creatinine was 1.5 mgms. %, a blood urea nitrogen was 31 mgms. %. Van den Bergh showed a total of 2.75 mgms. % with .85 direct and 1.9 mgms. indirect. Alkaline phosphatase was 3.1 Bodansky units; albumin was 5.4 gms. %; cephalin flocculation was negative; thymol turbidity was 4.4 units. Blood smears were reviewed by several observers and showed a normal number of platelets, normocytic normochromic red cells, and an absolute and relative neutrocytosis.

Repeat hemoglobin values on January 31 and February 4 were 19.1 and 19.5 gms. respectively, each with a hematocrit of 70. An X-ray of her abdomen was negative except for a suggestion of ascites. Chest X-ray showed some elevation of the diaphragms but there was no evidence of active pulmonary or cardiac disease. Blood volume studies on this 60 kilogram woman, using RISA, showed a total blood volume of 83 ccs. per kilo (normal is 60 to 80 ccs. per kilo) and a plasma volume of 30 ccs. per kilo (normal is 34 to 60 ccs. per kilo). Calculated red cell mass was therefore 56 ccs. per kilo (normal is 26 to 40 ccs. per kilo). Arterial oxygen saturation and erythropoietin studies were not available.

The combination of an abdominal mass and ascites associated with polycythemia and leukocytosis presented a difficult diagnostic problem. A paracentesis was done on February 1, with removal of 1200 ccs. of clear, yellow fluid. This fluid was negative on culture as were tests for malignant cells. Two days later, she went into irreversible shock, became oliguric, and died on February 4. Terminally, her WBC was 65,000 with 90% polys, and her blood urea nitrogen was 135 mgms. %.

Significant autopsy findings showed a uterus weighing 2800 gms. and containing 8 liomyomas, each from 15 to 20 cms. in diameter. None of these showed evidence for malignant degeneration. The endocervical canal was obstructed by two large myomas so that the endometrial cavity was dilated and filled with blood.

The liver weighed 1900 gms. The surface and cut sections were speckled brown except for an irregular 10 cm. pale yellow area on the posterior diaphragmatic surface. Hepatic veins were prominent and filled with red gummous blood clot which did not extend into the inferior vena cava. The microscopic pattern showed extensive areas of hemorrhage, central lobular congestion, and necrosis of central hepatic cells. (See figures I and II). Many central veins and branches of hepatic veins were filled with fibrin thrombi. Occasional veins contained organized thrombi which had re-canalized.

The spleen weighed 150 gms. and showed a normal architecture. The autopsy bone marrow was generally hyperplastic but was not diagnostic in any way. The lungs were normal grossly, but contained scattered multiple small emboli in the small arterioles on microscopic section. There were no other significant findings aside from the ascites and bilateral hydrothoraces, containing 300 and 200 milliliters respectively.

Diagnostic Possibilities:

This case presented a number of interesting problems. One could only speculate as to the sequence of events in this case, but her recent symptoms and signs would suggest an acute hepatic vein thrombosis (or Budd-Chiari syndrome). The clinical course and autopsy findings of organizing thrombi in the central and hepatic veins suggest a duration of about two weeks. Now was this event **de novo** or was it related to some pre-existing pathological condition? The diagnostic possibilities can therefore be considered in two categories:

1. Relative polycythemia, related to
   (a) acute hepatic vein thrombosis,
   (b) dehydration, or
   (c) to unknown causes.
2. Absolute polycythemia as found in
   (a) polycythemia vera with hepatic vein thrombosis,
   (b) polycythemia secondary to uterine fibroids, (as first reported by Thomson and Marson in 1953[1]), presenting as hepatic vein thrombosis.

My feeling is that this lady had an absolute rather than relative polycythemia since:

1. Clinically, she was not dehydrated on admission.
2. Her clinical course was relatively slowly progressive, considering the slow development of ascites and absence of pain.
3. Her hemogram and blood volume studies, although not conclusive, strongly point in

this direction. It is recognized that blood volume studies, using the RISA technique, are not completely reliable in the presence of ascites. However, the error was probably minimized by the fact that the ascites developed quite slowly and had almost stabilized at a maximum volume by the time of the blood volume determinations. A red cell volume of 56 cc/kilo and persistent hematocrit of 70 are comparable and furnish strong evidence for absolute polycythemia.

If one concedes that she had an absolute polycythemia (and no one can do so with certainty), does she have polycythemia vera or the more rare type of absolute polycythemia associated with uterine fibroids? Table I illustrates conditions which should be met to make the diagnosis of polycythemia vera.

Our patient presented none of the signs or symptoms of polycythemia vera. She had a polycythemia and leukocytosis, without thrombocytosis. The leukocytosis could be explained by the stress of the hepatic vein thrombosis **per se.** Unfortunately we do not have prior hemogram values to compare with those taken during this hospitalization. Platelet counts were not obtained but the blood smears were seen by several competent observers who felt the platelets were not increased. The bone marrow was of no help and very rarely is in distinguishing this entity. The absence of splenomegaly, both clinically and pathologically, certainly is strongly against the possibility of polycythemia vera but does not rule it out. On the other hand, it is probable that thromboses of this type are much more common with polycythemia vera than with the secondary types. In 1955, Brown and Johnson[2] reviewed the literature and found that 9 of 123 cases of hepatic vein thrombosis were associated with polycythemia vera. None of their cases were associated with the kind of secondary polycythemia seen with a variety of renal and cerebellar tumors or with uterine fibroids.

In summary, even though polycythemia vera cannot be ruled out in this case, neither do we have good evidence, other than statistical, to rule it in. Since this lady did have large myomata weighing 2800 gms. and did have a polycythemia, it seems altogether probable that her hepatic vein thrombosis was secondary to this rare combination. It would seem unlikely that myomata, polycythemia and hepatic vein thrombosis could occur coincidentally.

Table I — Absolute Polycythemia

	Polycythemia Vera	Secondary Polycythemia	
		Unsaturated	Saturated
Etiology	Idiopathic	Pulmonary, cardiac, etc.	Tumors
Blood cells	Pancytosis	Normal WBC & platelets	Normal WBC & platelets
Spleen size	Splenomegaly	Normal spleen	Normal spleen
Erythropoietin Activity	Normal	Increased	Variable
Arterial Oxygen	Normal	Decreased	Normal

Table II

Erythrocytosis and Tumors

Tumor	Number of reported cases
Uterine myomata	12
Hemangioblastoma	41
Renal carcinoma	66
Renal adenoma	1
Renal sarcoma	1
Pheochromocytoma	1
Hepatic carcinoma	29

Erythrocytosis and Tumors:

The association of erythrocytosis with tumors has been known for some time. A recent compilation of such tumors shows their relative incidence. (Table II).[3]

However, it has only been recently that uterine fibroids have been incriminated. Thomson and Marson in 1953[1] originally reported a case where a large uterine fibroid was removed and elevated red cell values returned to normal and remained so thereafter. Since that time fourteen other case reports have been added to the literature;[4-17] none of these were associated with elevation of the white count or platelets. Hemoglobin values were usually over 17 gms. and hematocrits were usually over 60%. Blood volume determinations were done in 7 instances with an invariable increase in the total red cell mass but with variable findings for plasma volume and total blood volume.[3] In all instances uterine fibroids have been quite large, even so massive that they are described as extending to the umbilicus or weighing in excess of 2500 gms. Since all cases have been reported since 1953, there has not been a long term follow-up on these patients. It is of interest that one of the cases reported by Damon and Holub later developed polycythemia vera some six years after the uterus had been removed. There is no evidence to suggest that the incidence of fibroids is increased in patients with polycythemia vera.[7]

This syndrome has been reported in Negroes and in nulliparous as well as multiparous women. It seems probable that the incidence of this syndrome would be increased except that most patients are pre-menopausal, probably have excess bleeding secondary to their enlarged fibroids, and thereby mask the condition.[17]

Pathophysiology of polycythemia with myomata:

A variety of explanations has been offered for the association. Originally Horwitz and McKelway[4] described large veins in association with the fibroids and wondered about an arteriovenous shunt with subsequent oxygen unsaturation and secondary polycythemia. Unfortunately no one has ever been able to demonstrate the shunts and total blood volume findings have not been compatible with this thought.[6] Another consideration that the life of red blood cells might be prolonged either by some direct humoral elaboration or by a humoral inhibition of the reservoir function of the spleen has been ruled out by the finding of normal red cell survival in a number of cases.[8]

The role of erythropoietin increase in some tumors, especially of renal cell origin, has been definitely established. Its role in patients with large uterine fibroids has not been determined. Plasma erythropoietin studies were done in two case studies,[14, 17] but were found to be normal. Tissue extract from the fibroids also lacked erythropoietin activity.[17] These negative findings do not rule out the possibility that erythropoietin factor might play a part, since,

1. The methods for extractions of erythropoietin are quite crude.
2. It is possible that the bone marrow is utilizing the erythrocyte-building factor quickly in these cases and thereby removing it from the blood stream very rapidly. This, of course, would make it very difficult to detect the substance in the blood stream.

If one concedes that erythropoietin is involved, one must still speculate on how its production is stimulated. Stohlman in his recent review,[18] indicates that hypoxia is the usual stimulus for the release of erythropoietin with resulting increased red cell production. This raises the possibility that the size of the fibroid tumor might impair respiratory effort, decrease pulmonary function (as in the Pickwickian syndrome), produce hypoxia and thereby stimulate the elaboration of erythropoietin. [5, 13]

Or is it possible that the size of the uterine mass **per se** might compress the renal vessels, impair renal circulation and thereby stimulate the production of erythropoietin from the juxtaglomerular cells of the kidneys?[15] There are also the still unsettled questions as to whether tissues other than kidney (such as uterus or liver) can also produce erythropoietin and under what circumstances they might do so. In short, there is no good evidence to support any of these theories.

Budd-Chiari Syndrome (Hepatic vein thrombosis):

Cecil and Loeb[19] point out that thrombosis of the hepatic veins "may result from primary endophlebitis or may be secondary to inflammatory, cirrhotic or neoplastic changes in the liver." They also indicate that thrombosis can occur with certain diseases characterized by multiple thromboses such as polycythemia vera. Other associated conditions have included trauma, pregnancy, peritonitis, carcinoma of the gallbladder and other malignancies, fungus diseases, hepatomas, sickle cell anemia and so forth. To my knowledge, uterine fibroids have not been implicated to date.

The clinical course of the syndrome depends upon how rapid the onset and how complete is the occlusion of the hepatic vein or its radicals. Invariably pain, ascites, enlarging liver, and anorexia are present. Jaundice, splenomegaly, leukocytosis and hemoconcentration may occur — especially in the fulminating clinical course. One could judge that our case was one of slow progression since there was very little discomfort and liver enlargement and ascites developed slowly. The paracentesis undoubtedly disturbed the equilibrium between the intravascular space and the interstitial space represented by the ascitic fluid and precipitated a much more rapid demise.

That hepatic vein thrombosis is rare is attested by the fact that Brown et al[2] in 1955 could find only 123 cases of this syndrome; nine of these cases were associated with polycythemia vera. Later in 1959, Parker[20] reviewed 236 cases and found fourteen cases of polycythemia vera. In some of these cases the diagnosis was in doubt because of obvious difficulties in making the diagnosis of polycythemia vera in the presence of hepatic vein thrombosis. Neither author mentions a case associated with uterine fibroids.

Summary:

A case of acute hepatic vein thrombosis (Budd-Chiari syndrome) associated with large uterine fibroids and polycythemia is reported. It seems extremely unlikely that such an asso-

ciation of findings would be fortuitous. It is possible that the polycythemia was related to polycythemia vera or merely to hemoconcentration, but either seems unlikely. Even though this patient does not fulfill the criterion of fifteen previously reported cases of myoma-erythrocytosis, in that surgery corrected elevated red cell values (a hysterectomy could not be done because of the patient's condition), it was felt worthy of reporting because of its unusual presentation.

The most likely explanation for the course of events in this case is to assume that the uterine fibroids and the polycythemia had coexisted for a number of years. Possibly as a result of the venostasis produced by an enlarging lower abdominal mass in conjunction with a tendency for a hyper-coagulable state, a hepatic vein thrombosis occurred to produce the final clinical picture. To my knowledge, such a case has not been reported previously.

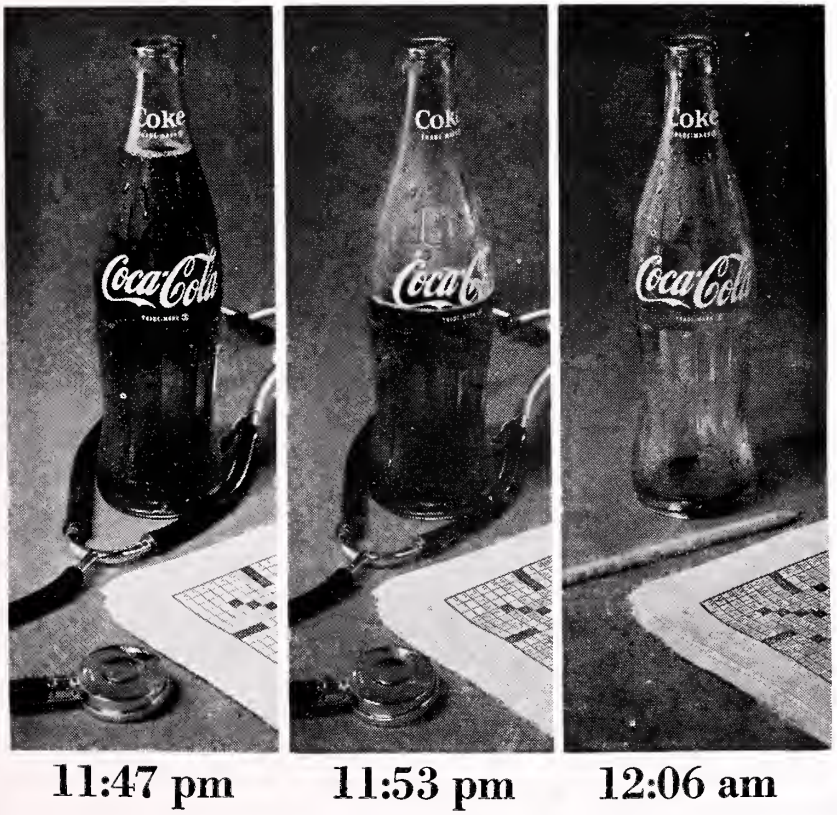
Note:

The author wishes to acknowledge Doctor Clayton Behrens and Doctor Thomas O'Toole as the associated physicians in the care of this patient. He would especially like to express his appreciation to Doctor Harold Frost, pathologist at Bennett-Clarkson Hospital in Rapid City, South Dakota, for his interpretation of autopsy findings, providing the pathological illustrations, and his critical review of the protocol.

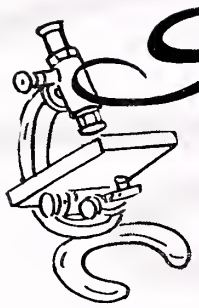
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and

Melvin V. Gerbie, M.D.

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Presented as a part of a seminar on chemotherapy Sioux Valley Medical Association Meeting, 1964

Chemotherapy has been shown to be of definite value in the treatment of some advanced gynecologic cancers. The best results in all cancer chemotherapy have been achieved in choriocarcinoma. Although Chemotherapy for squamous cell carcinoma of the cervix and carcinoma of the endometrium has been ineffective, palliation of some patients with ovarian carcinoma has been dramatic.

Alkylating agents, antimetabolites, and antibiotics are the common types of drugs in current clinical use and have been shown to have some usefulness in treatment of gynecologic cancer.[5] The alkylating agents (nitrogen mustard, thiotepa) alter the function of essential cellular components by direct chemical reaction with the formed nucleic acids simulating radiomimetic effects. The antimetabolites (methotrexate, 6-mercaptopurine) produce their anti-tumor effect by interfering with normal biologic synthesis, particularly of nucleic acids. Actinomycin-D is an antibiotic which has received most attention recently in the treatment of trophoblastic disease and probably produces its effect by interference with the production of ribonucleic acid.

These agents have been used alone and in combination; systemically and locally; and either as sole treatment or as an adjunct to operation and/or radiation.

In spite of all of these combinations used in an effort to find a therapeutic regimen for all gynecologic cancers, no specific treatment has developed. Encouraging results are being reported with regression of tumor, increased survival time, and some apparent cures. The fol-

lowing is a discussion of the applications (indications and limitations) of some of the various drugs in current use.

TROPHOBLASTIC DISEASE

In malignant disease of the trophoblast, chemotherapy has produced results which have not been possible to obtain in other forms of cancer. This may well be due to the special immunologic nature of this tissue which is usually of placental origin, thus being one-half paternal tissue. This would set up a different form of tumor host relationship and may account for the excellent chemotherapeutic response.

Prior to chemotherapy it had been generally accepted that patients with choriocarcinoma seldom survive; and if the patient survived, the diagnosis was considered incorrect. This idea was dispelled by Brewer[1] who presented 21 of 147 patients with choriocarcinoma in the Albert Matthieu Chorionepithelioma Registry who have survived without evidence of disease for 5 or more years. In a subsequent report[3] the absolute 5 year survival rate of 122 patients with choriocarcinoma treated by hysterectomy was 31.9%. If metastases were not present at the time of operation the survival rate was 41.4% as compared to 19.2% with metastases at the time of hysterectomy. Although these figures are much better than had been generally taught, they do not approach the favorable results reported by Hertz and his associates[9] who obtained a 48% survival rate in patients with metastatic trophoblastic disease treated with chemotherapeutic agents.

In 1956 Li, Hertz, and Spencer[12] first reported on the use of methotrexate in choriocarcinoma and chorioadenoma destruens. Because trophoblastic tissue has a higher folic acid requirement than normal tissue, therapy can destroy the tumor tissue without producing severe irreversible toxicity. Since the first report they have subsequently reported on 110 patients with malignant trophoblastic disease.[8] Their primary form of therapy was by the anti folic acid compound methotrexate, but in addition vincaleukoblastine and Actinomycin-D have been used. Although their over-all total remission rate was 59%, the Hertz Group feel they can anticipate a 76% total remission rate by the use of a combination of the chemotherapeutic agents.[8]

Our results at the Choriocarcinoma Treatment and Research Center, Passavant Memorial Hospital, Northwestern University Medical School are quite similar. Our primary form of therapy to date has been the administration of methotrexate as initially devised by Li and Hertz. The total dose is 2.5 mg. per kilogram divided over a five day course. Courses may be repeated approximately every two weeks with the major tissue response in 7-10 days and the toxic response in 3-5 days. The major criterion for response to therapy is the titre of chorionic gonadotropin done 7-10 days after treatment ends. Repeat pelvic examinations, and serial chest x-rays provide evidence of response to treatment. Stomatitis, bone marrow depression, drug rash, anorexia, nausea, and alopecia are the common but temporary toxic reactions. Daily evaluation of the patient is essential, and treatment should be withheld if severe leukopenia or thrombocytopenia occurs. When resistance to methotrexate becomes apparent, Actinomycin-D in doses of 10 micrograms per kilogram intravenously is given daily for five days. If there is again resistance to the drug therapy or an exacerbation of the disease process, triple therapy composed of 5 mg. methotrexate, 10 microgram/K, intravenously of Actinomycin-D, and chlorambucil 20 mg. is then instituted.

The greatest pitfall in treatment of these patients is the test for hormone titre. The usually employed biologic pregnancy tests have been shown to be grossly inaccurate.[2] A bioassay method (Delfs or Kleinfelter) in which the mouse uterine weight is employed is essential for the accurate evaluation and treatment of these patients.

There is usually a prompt and progressive drop of the hormone titre following the administration of medication. With the drop in titre there is progressive regression of the lesions (usually pulmonary). Complete remission is indicated by persistent hormone titres within the range expected of patients in this age (these test methods usually include pituitary gonadotropins). A later reelevation of titre in the absence of a normal pregnancy indicates recurrence of disease, and the therapy is reinstituted, as outlined above.

In an effort to retain the reproductive capacity of young women with trophoblastic disease, a new group of patients is being studied from the standpoint of chemoprophylaxis.[7] These are patients in whom a persistent chorionic gonadotropin titre is present for a minimum of 45-60 days following the passage of hydatidiform mole. Approximately one-half of these women will develop malignant trophoblastic disease. Using chemotherapy alone the results have been most encouraging and some

of these women have had subsequent normal pregnancies. It is hoped that this method will prevent malignant trophoblastic disease.

OVARIAN CARCINOMA

Probably the greatest number of gynecologic cancers treated with chemotherapy have been ovarian. Complete surgical excision is not usually possible and radiation is unimpressive. Thus, chemotherapy has been turned to in an effort to control these tumors.

Evaluation of the effects of chemotherapy is often difficult, since the patient is usually receiving or has received other forms of therapy. Subjective improvement noted in many reports must be carefully evaluated because of the placebo effect (50%). Objective improvement is difficult to measure. A greater than 50% decrease in size of tumor mass, ascites, or pleural effusion is regarded as a good result.

Burns, et al[4] at M.D. Anderson Hospital obtained a good result in 78% of patients using L sacrolycin, an alkylating agent, (remission 6-12 months). They also obtained complete suppression of ascites or pleural effusion in 71% of patients for 6 to 12 months. The medication was given intravenously in a dose of 0.8 - 1 mgm/kilo to 500 cc dextrose and water over an 8 hour period. This dose was repeated at 3 week intervals if the platelet count returned to normal. Miller and Brenner[13] using cobalt 60 and chlorambucil compared results of the various treatment forms alone and combined. The median survival of patients receiving combined therapy was 8½ months compared to 6 months with chemotherapy and 4½ months with radiation. They noted no increase in toxicity when combined forms were used. A similar study of Hreshchyshyn with TEM as the chemotherapeutic agent showed a 70% one year survival in a group treated by combined means compared to 11% in the groups treated with radiation or chemotherapy alone. He reviewed the world literature from 1950 to 1962 and found that 44% of patients showed some response to chemotherapy. He concluded that initial treatment should be surgical plus postoperative irradiation followed by chemotherapy for relapse.[11]

We have used cyclophosamide (cytoxin), an alkylating agent for ovarian cancer with rather disappointing results. This drug has been shown to have best results in hematologic malignancy. It may be given intramuscularly or intravenously. When used orally, 30 mg/kg are given initially, then 10 mg/kg weekly.

Of proven value in preventing or reducing ascites associated with metastatic ovarian carcinoma is the intraperitoneal injection of nitrogen mustard (mustargen).[6, 10] This is usually performed at the time of primary surgical removal of the tumor, but may be done later during paracentesis if ascites was not present at the original operation. The dose is 0.2 - 0.4 mgm/kilogram of body weight, the lower dose being used when immediate postoperative irradiation is planned. The powdered medication is diluted in approximately 200 cc of normal saline and instilled through polyethylene catheters placed in the abdominal cavity in various locations, particularly the lower pelvis and periaortic region. The catheters are placed in the proper locations and the abdomen closed before instillation of the medication. The catheters can be placed in the abdomen at the time of paracentesis. Following the injection, the catheters are removed and the patient moved from side to side frequently for the next 2 hours. Nausea is common but temporary, and is managed by the usual antiemetics.

CARCINOMA OF THE CERVIX AND ENDOMETRIUM

Chemotherapy of these lesions has previously been limited to palliative purposes with mixed results. Recent work has involved regional (pelvic) perfusion technics including attempts at cure in patients who have had no previous treatment by operation or radiation.[14, 15, 16, 17] The dose of medication can be increased by the simultaneous systemic administration of an antidote, such as citrovorum factor in patients in whom methotrexate is the perfusate. Hormones such as progestins have been used experimentally in the management of endometrial carcinoma. To date, the results show some degree of palliation but no cures have been reported.

CONCLUSION:

The administration of chemotherapeutic drugs in certain gynecologic malignancies has contributed significantly to their treatment. It has been shown that objective regression and probably cures can be achieved in patients with choriocarcinoma. Palliation with temporary regression of tumor and particularly ascites in ovarian carcinomas can be achieved.

It is essential to have a real understanding of the drugs described as each has definite indications, contraindications, and severe toxicity.

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ANEMIA

By

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INTRODUCTION

Management of the anemic patient has been handicapped by three common errors. First, the belief that the initial hemoglobin or hematocrit indicates why the patient is anemic. Second, the problem of anemia is not approached logically in terms of production, loss and destruction of red cells. Third, the need for immediate treatment is overemphasized. The overwhelming majority of patients do not need immediate treatment, many patients' anemia cannot be treated, and above all, recognition of the cause of the anemia is more important than treatment. Elimination of these errors will in the long run result in better treatment at a lower cost.

STATEMENT OF PROBLEM

Faced with an anemic patient, the physician should logically define the problems to be solved. First, is the patient's life jeopardized by the anemia; i.e. does it require emergency treatment? Second, is the cause of the anemia known, and if not, how can it be recognized? Third, what treatment, if any, is to be offered?

I. Does the anemia require emergency treatment?

The patient's adaptation to the anemia is of primary importance, the severity of the anemia being of only secondary importance. The patient is less in need of treatment than of a diagnosis as long as he, a) has walked into the office or hospital; b) denies orthopnea even with moderate dyspnea; c) has maintained fairly normal activity; d) is not thirsty and/or not had a decreased urinary excretion; and e) shows no evidence of distress (emotional, respiratory or vascular). However, if

the anemia will become rapidly worse due to continued hemorrhage or red cell destruction the patient may need emergency treatment.

In order to evaluate the need for emergency treatment and to guard against a sudden worsening of the situation the following are recommended: physical examination to include determination of blood pressure, pulse and respiratory rate, examination for distention of neck veins, and auscultation for pulmonary edema and gallop rhythm. The laboratory studies should include hemoglobin or hematocrit determinations, measurement of fluid intake and output, checking all stools for gross and occult blood (if necessary obtaining stool by rectal examination), and measuring loss of blood from the body. Acute blood loss may not be reflected in the hematocrit until after a lapse of several hours.

If emergency treatment is needed, then whole blood should be used for acute blood loss and red cells for chronic blood loss and hemolysis. Blood volume is usually normal in the latter and whole blood may induce pulmonary edema. A fairly pure red cell suspension may be obtained by storing blood upside down instead of the archaic system of right side up. Of course the staff should be warned not to shake the transfusion bottle.

Every physician who gives a transfusion should remember: 1) the mortality and morbidity from one transfusion approaches that from one appendectomy and 2) the patient who received only one transfusion received one too many.

The patient should be sedated if needed, using morphine if necessary. The more anemic the patient is, the more effective is oxygen. If the patient needs emergency transfusion he should not at the **same** time be subjected to stressful procedures, for example x-ray examinations or gastric intubation, likely to cause pulmonary edema.

II. Is the cause of the anemia known?

The great majority of anemia patients are not diagnostic problems. They have a disease which is known to cause anemia by virtue of increased red cell destruction or decreased red cell production, or by hemorrhage. These patients need no further study except to corroborate the anemia by a hemoglobin **or** hematocrit. Each repetition of a differential and **combination** of hemoglobin or hematocrit is a waste of their money.

In a minority, the anemia is of unknown etiology. A purely logical approach is to measure production, destruction or hemorrhage of red cells, and whether the latter is from the body or into tissues. Unfortunately, this Utopian state has not arrived. We temper the logical with the practical, translating facts obtained by a stepwise procedure (dependent on availability of techniques and expense rather than on logic) into estimates of production, destruction and blood loss, i.e. we start with the history, physical examination and blood smear.

There is only one golden opportunity to make a diagnosis and that is prior to treatment. Conversely, there is no more serious error than to treat a diagnostic problem unless an emergency is present.

A. History and physical examination

Red cell production rate cannot be determined from the history or physical examination. Excess destruction of red cells is recognizable only by jaundice not due to other causes. However, destruction of red cells may occur at at least 4 times normal rate without jaundice. Blood loss may be recognized by bleeding into the tissues or from the body. Gastrointestinal bleeding must exceed 40 to 80 ccs daily to produce a tarry stool. Furthermore, the majority of patients do not watch their stools. A female who uses more than 12-16 pads per menstrual period or who used 2 pads at a time, is bleeding excessively.

B. Laboratory procedures that are widely available

It is the purpose of the laboratory work to translate the recognition of the anemia into the cause in terms of production, destruction and loss of cells.

1. Blood smear

Critical examination of the blood smear is the most important step. Every smear has red cells, white cells and platelets and **each** should be examined. Abnormalities in both white cells and platelets usually indicate intrinsic marrow disease. For example in pernicious anemia a thrombopenia and neutropenia accompany the anemia. However, normal white cells and platelets do not indicate that the anemia necessarily originates outside the hematopoietic tissues.

The red cells should be examined for polychromasia (or a reticulocyte count done), since such "blue red cells" are

reticulocytes and offer a guide to the rate of red cell production. There is no direct means of discovering an increased rate of red cell destruction from the blood smear except in those rare cases where red cells pathognomonic of a specific hemolytic disease or microspherocytes are discovered. The lack of a reticulocytosis is not evidence against excess destruction of red cells. Red cell cytology should be studied. For example, in the overwhelming majority of patients hemoglobin deficient red cells are due to chronic blood loss.

2. Stools for occult blood

Blood loss accounts for at least 99% of all iron deficiency in adults. The one common type of blood loss which may not be elicited from history or physical examination is that originating from the gastrointestinal tract. Consequently **every** patient with an anemia of unknown etiology should have stools examined **repeatedly** for occult blood.

3. Bilirubin

The bilirubin level depends upon the rate at which bilirubin enters into, is cleared from and regurgitates back into the blood. If the latter two are not altered, liver function is normal and there is no biliary obstruction. Then the level of indirect bilirubin is a fairly accurate measure of the rate of entrance. The rate of entrance in turn depends on the number of red cells, their average age and the rate of red cell destruction. If the number of red cells is decreased, other factors being unchanged, the level of bilirubin should also be decreased. The level of bilirubin should therefore be interpreted in terms of the hemoglobin level; i.e. other factors being equal, a level of 0.8 mg% is normal with 15 gms% of hemoglobin and abnormally elevated with 7 gms% of hemoglobin.

4. Other tests

The procedures outlined will enable the physician to diagnose the majority of anemias that are diagnostic problems. Some patients will remain undiagnosed and consultation should be sought for these.

III. Treatment

Patients may be divided into two groups, those whose anemia is treatable only by transfusions, that is there is no specific treatment, and a group for whom there is specific treatment.

A. Patients for whom there is no specific treatment

In this group there is a decrease in production and/or increase in destruction of red cells. Practically all subacute or chronic diseases induce an anemia by this mechanism, and the anemia cannot be alleviated except by treating the primary disease itself. For example, the only way to alleviate the anemia of carcinoma, uremia, infection, or collagen-vascular disease is treating the disease itself. Hematinics are a waste of the patient's money, depress appetite in a patient who was probably already anorexic, and endow the physician with a false sense of having earned his fee.

Cobalt or testosterone will raise the hemoglobin as much as a gram in some of these patients. However, I see no benefit to a patient with cancer or azotemia from raising the hemoglobin from 8 gms% to 9 gms%. On the other hand, cobalt is often nauseating and testosterone is very expensive and masculinizing to females. Testosterone is worthwhile in the very rare Fanconi's disease or myeloid metaplasia.

Transfusion is the only means of alleviating the anemia. Each unit of blood will temporarily raise the count by the ratio of the red cell volume in that unit (usually 200 ccs) to the patient's red cell volume. At best, half of the increase in red cell volume will be lost in 60 days and the patient's count will be back to its original level in 120 days. Since most patients in this group destroy red cells at an accelerated rate, duration of alleviation of anemia is usually less. In fact, in some patients, particularly after multiple transfusions and development of antibodies, transfusion may not raise the hemoglobin and instead result in an undesirable reaction.

The indication for transfusion in this class of patients is never the severity of the anemia but only the failure of the patient to adapt to the anemia. A bedfast patient dying of cancer is as comfortable at 6.0 gms% as at 12 gms% of hemoglobin.

B. Patients for whom there is specific treatment

These patients need only the specific drug for their specific disease. The use of multiple drugs is illogical, masks any errors, and is a tragic waste of the patient's resources. If a patient does not respond to therapy, consider an error in diagnosis or some complicating factor preventing response.

1. Iron

Iron is dispensed in the cheapest form (ferrous sulfate). There is no virtue to any other type of oral iron. If a patient is nauseated the dose can be halved and given immediately after meals. Oral iron should be continued at least 6 to 9 months after alleviation of anemia in order to reconstitute tissue stores. Parenteral iron will rarely correct an anemia not corrected by oral iron although parenteral iron has the advantage of quickly reconstituting tissue stores once anemia is corrected. It is recommended for patients unable to tolerate oral iron, for patients who lose more than about 30 ccs of red cells daily and for patients with gastrointestinal diseases such as ulcerative colitis, where oral iron is irritating.

If the anemia is not corrected, consider a) the anemia was not iron deficient in type; b) there is something preventing response and c) the patient is bleeding faster than red cells are being made.

IRON DEFICIENCY IN ALL ADULTS AND MANY CHILDREN AND INFANTS IS DUE TO BLOOD LOST FROM THE BODY AND HAS NOT BEEN TREATED SUCCESSFULLY UNTIL THE BLEEDING LESION HAS BEEN IDENTIFIED AND TREATED.

2. Vitamin B_{12}

At a conservative estimate 90% of the B_{12} prescribed by physicians is wasted. B_{12} can be used to treat B_{12} deficiency, only B_{12} deficiency and nothing but B_{12} deficiency, and conversely the B_{12} deficient patient needs only B_{12} treatment. For practical purposes the only cause of B_{12} deficiency in the United States is pernicious anemia. To this may be added the occasional patient who lives more than 4 years after total gastrectomy and the patient with a diseased ilium. If a patient does not respond to B_{12} within at most 2 weeks, B_{12} deficiency is not the cause of the anemia.

Thirty micrograms in one dose is enough to produce a response. Thirty micrograms a month is an adequate maintenance. Larger doses are excreted in the urine.

3. Folic Acid

This drug is used only for treatment of folic acid deficiency. This practically never occurs as a primary disease. Like pernicious anemia, folic acid deficiency produces a megaloblastic anemia. If there is no response to folic acid in 2 weeks another cause for anemia or complicating disease should be sought.

4. Adrenal steroids

These drugs are usually helpful in treatment of hemolytic anemias associated with an antibody attached to the red cells (positive Coomb's test). The best steroid is the cheapest. ACTH offers no advantage and many disadvantages. Only rarely will a patient who has not responded to as much as 40 or 60 mgs daily respond to higher doses. Every patient on steroids is a candidate for a bleeding ulcer and should be treated as though he had an ulcer.

CHEMOTHERAPY—

(Continued from Page 26)

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EDITOR'S NOTE: Due to space limitations, the remainder of the references have been omitted. Requests should be addressed to the **South Dakota Journal of Medicine and Pharmacy,** 711 N. Lake Avenue, Sioux Falls, S. D.



Many years ago our South Dakota Medical School needed a new building. Several of us who were interested, waited on Governor Mikkelson to urge an adequate appropriation for its construction. The wise Governor asked us what we, as doctors in the State, were doing for medical education.

That was the seed that grew into the Medical School Endowment Fund. We **had** not done much, but this group devised the Endowment Fund with a vision of an eventual fund of over a million dollars to be used to endow various professorships and to buy equipment, but realized that to have the fund grow to a useful amount, it must be kept inviolate, invested, and the interest added to the fund until it had reached a very appreciable amount.

So was formed the Endowment Fund Corporation, which now has potential assets of close to $100,000.00. So the Chinese proverb that "the longest journey starts with a single step" was true in our Corporation. This Fund is a long time and **permanent** Endowment, the interest of which can eventually be a very potent factor in medical education for our State.

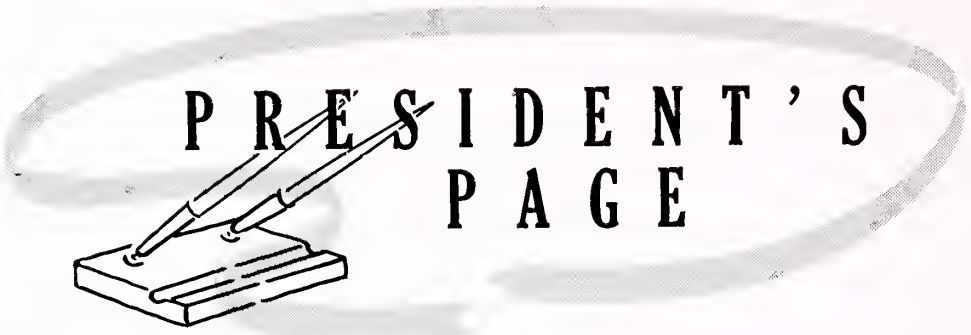
There now is a movement in effect which could be construed to use the Fund to get additional Federal money for student loans. This would erase any endowment aims of the original plan.

The writer has no quarrel with the AMEF or Federal fund grants for student loans, but would hate to see an IDEAL started by us dissipated into an **annual** fund which is used up each year, or supplanted by an AMEF fund which is junior to our ideal.

So please, Doctors of South Dakota, and graduates of the University of South Dakota Medical School, continue to contribute to our own Endowment Fund. Let us build it to an eventual fund of more than a million dollars to do what was originally planned — for permanent, perpetual funds for advancement of medical education for South Dakota.

Make memorial gifts to the South Dakota Endowment Fund for departed friends and relatives. Give $1.00 per year for the number of years you have been in practice. Let us make the original dream of its founders come true. Not in our lifetime, but for a future when the interest from a million dollars will be a real help to our medical school, and at the same time be an adequate student loan fund **without** Federal aid.

L. J. Pankow, M.D.



Dear Fellow Members,

During the 1964 Annual Meeting in Sioux Falls, there was a revision of the committee organization of the South Dakota State Medical Association, in an attempt to streamline and improve the functions of the Association. Six commissions of twelve members each took the place of a large number of committees.

While this is no doubt a big step in improving the function of the State Medical Association, I think you should be aware of the job that goes to the Commission Chairmen. They are responsible for sifting through a tremendous amount of information, and assigning projects and tasks that were formerly more widely distributed.

In mid-summer, your president asked for a meeting of the Executive Committee and of the six Commission Chairmen in order to discuss the implementation of these changes. To my utmost gratification, the attendance at this meeting was 100% and the enthusiasm and willingness shown by the individuals involved was one of the most gratifying experiences in my career in medical politics. I therefore make a plea to all members of the State Association to help our commissions in the job of running and improving our Association with the same enthusiasm and energy these chairmen have shown your duly elected officers.

As with any change, I am sure there are going to be kinks in the rope and minor alterations to be made at a later date. I ask all of you to work with our new set-up, as we now have it, to the best of your ability and, in addition, to keep in mind suggestions for continued improvement and changes that may be necessary in the future. If we are to be a vital and effective organization in providing better medical care for more people, it takes our wholehearted interest and active participation.

Of necessity, the appointments of Commission Chairmen and commission members were made by the president. While I tried to solicit all the information I could as to people who were interested in particular problems and fields, I am sure I have missed many of you throughout the State who are willing and anxious to help with the affairs of the Association. I would greatly appreciate it if those of you who read this and are interested in any of the various activities, would let me know. I can assure you that there is always room for anyone who is willing to help. If you are unable to help by actually coming to committee meetings and working, you can certainly help by giving us your ideas on various problems and activities. Whether these ideas and suggestions are in agreement or disagreement makes no difference. I can assure you that they will receive our personal attention, that each of you will receive a reply, and that your opinions and ideas will be considered.

The elected officers and appointed officials of your Association can only do what they, in good conscience, feel best. Many times their actions, while well intended, are based on misinformation or lack of information and only you can help us in this.

Please let us hear from you.

Fraternally yours,

James P. Steele, M.D.
President

ECONOMICS



SURVEY OF THE MENTAL RETARDATION PLANNING IN SOUTH DAKOTA

(July, 1964 - December, 1965)

In the fall of 1963, the Congress of the United States passed two laws which stimulated and made possible the Mental Retardation Planning presently underway in all states of the Union.

Public Law 88-156 increased the appropriations for Maternal and Child Health Programs, and South Dakota received $30,000 as grant-in-aid for comprehensive Mental Retardation Planning. The required matching funds ($10,000) were provided by the South Dakota Association for Retarded Children.

The objectives of the planning are:

(1) To create a state plan for comprehensive state and community action to combat Mental Retardation;
(2) To survey available facilities;
(3) To assess future needs;
(4) To coordinate available resources;
(5) To increase community based and community oriented facilities for the retarded;
(6) To stimulate public interest in this health problem; and
(7) To improve the care of the mentally retarded in order to make them useful members of society, as much as possible.

The State Plan for Mental Retardation will be written by the State Health Officer and submitted to the State Government on or before December 31, 1965. A Coordination Committee for Planning (32 members as the representatives of governmental, professional and lay organizations, including the South Dakota State Medical Association) has been appointed and assists the State Health Officer in the planning for Mental Retardation as well as for Mental Health. The latter runs parallel. Out of this Coordination Committee, an Executive Committee for Mental Retardation Planning has been elected to provide guidance and to conduct business.

Fourteen State Committees, again composed of professional and lay persons, have been created and are charged with different aspects of the planning, such as: Private medical practice; Early diagnosis, Treatment and Evaluation; Institutional care; Law; Education, Training; Welfare, etc.

The State is also divided in five regions and Regional Planning Committees are presently formed to identify local problems and present possible solutions.

The 14 chairmen of the State Committees and of the five Regional Planning Committees constitute the State Council on Mental Retardation. This Council will present facts and solutions to the Executive Committee for Mental Retardation Planning and the Coordination Committee. The plan provides that the Council employ consultants in the fields of medicine, psychology, child development, law, special education, and others from South Dakota and also out of state.

The final plan will be presented to the Governor and the Legislature for implementation and action upon the recommendations, or to do whatever appears necessary otherwise.

The philosophy behind the South Dakota Mental Retardation Planning activities is the development, with Federal Aid, of a State Plan which takes into consideration the typical needs of our state. The plan must provide the best

medical, psychological, and educational care to our mentally retarded citizens under an effective and economical system.

Public Law 88-164 provides Federal funds for the mentally retarded and, in another part, for the construction of Mental Health Centers. This act provides no funds for staffing. The guidelines are not final yet, but it has become clear that these facilities will be community-based institutions. They might include part-time boarding schools with academic and vocational programs, nurseries, kindergarten, day care centers, etc. These community institutions will be built with Federal matching funds (probably 1:1), similar to the Hill-Burton Plan for hospitals. It appears at present that the necessary local funds will not be provided by the State Treasury. A good plan will create effective, comprehensive institutions, supported by a large enough part of the population, and will avoid "marginal" facilities.

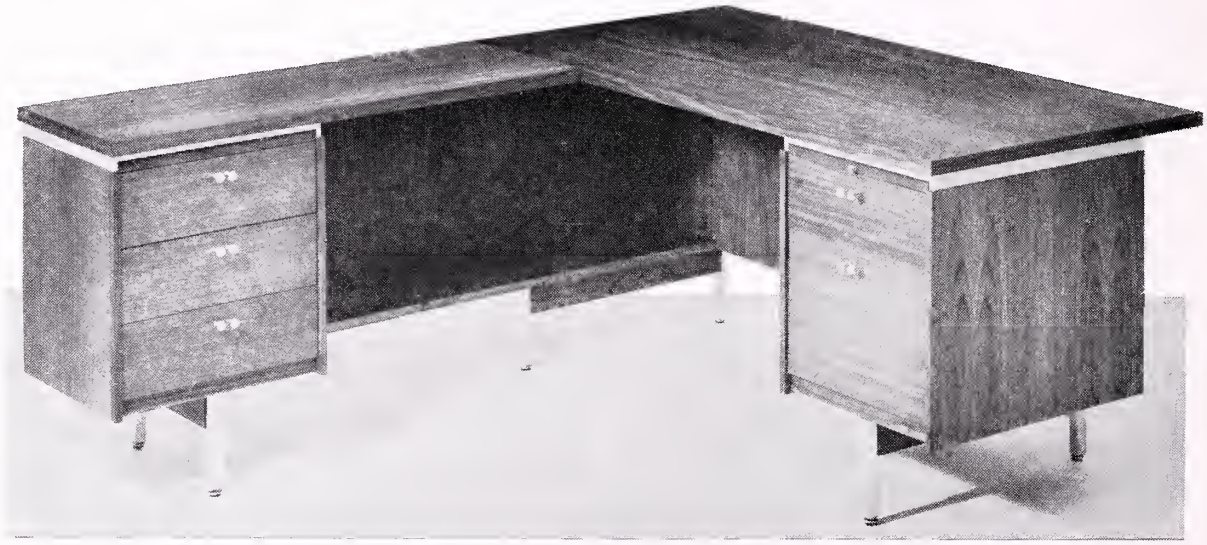
Plans for a Child Development Clinic, a comprehensive diagnostic center for mentally retarded children and counselling center for their families, already have been formulated.

The problems in South Dakota are obvious. They are mainly related to the geography and population distribution in our State, and to the scarcity of present facilities (Redfield, special classrooms and sheltered workshops supported by public and private means). It appears mandatory to rally the support of as many professional and lay groups as possible for this undertaking, in order to devise the best plan possible — acceptable to all and beneficial to those who need it.

E. H. H.

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MINUTES OF THE BUDGET AND AUDIT COMMITTEE

January 9, 1965
10:00 A.M.

Medical Association Building, Sioux Falls, S. D.

The meeting was called to order by Dr. A. P. Reding, Secretary of the State Medical Association. Present were Dr. A. P. Reding, Dr. A. K. Myrabo, and Dr. D. L. Scheller. Mr. Richard C. Erickson, Executive Secretary, was also in attendance.

Mr. Erickson discussed the financial report for December and the proposed budget for 1965-1966.

Dr. Myrabo moved that an item for out-of-state travel for physicians be included in the proposed budget; that authorized trips be reimbursed to physicians to include first class air fare, or its equivalent, plus $30.00 per diem. Per diem will be determined by each 24 hour period. The motion was seconded by Dr. Scheller and carried.

Dr. Myrabo moved that the Association offer fringe benefits to our employees in the form of an annuity. The motion was seconded by Dr. Scheller and carried.

The Committee recommends to the Council that the following changes be made in the proposed budget:

Increase—Employee Relations to	$1150.00
Decrease—Reserve to	2565.00

Dr. Myrabo moved that the budget as proposed be accepted with the above changes. The motion was seconded by Dr. Reding and carried.

The meeting adjourned at 11:30 A.M.

MEDICAL SCHOOL ENDOWMENT ASSOCIATION MEETING

January 9, 1965
Medical Association Building
Sioux Falls, South Dakota

The meeting was called to order at 7:30 P.M. Present for roll call were Drs. T. H. Willcockson, F. R. Williams, J. B. Gregg, G. E. Tracy, Warren Jones. Also attending the meeting were Drs. L. J. Pankow, A. P. Reding, R. H. Quinn, Dean Walter Hard, and Mr. Richard C. Erickson.

Mr. Erickson read the minutes of the previous meeting and they were approved as read.

Dr. Pankow discussed the background of the Endowment Association and the original aims of the founders.

Dr. Willcockson nominated Dr. Williams for President of the Endowment Association. Dr. Jones moved that nominations cease and that a unanimous ballot be cast for Dr. Williams. The motion was seconded by Dr. Tracy and carried.

Dr. Jones nominated Dr. G. E. Tracy for Vice President of the Endowment Association. Dr. Willcockson moved that nominations cease and that a unanimous ballot be cast for Dr. Tracy. The motion was seconded by Dr. Jones and carried.

Dr. Jones nominated Dr. T. H. Willcockson for Secretary-Treasurer of the Endowment Association. Dr. Tracy moved that nominations cease and that a unanimous ballot be cast for Dr. Willcockson. The motion was seconded by Dr. Jones and carried.

Mr. Erickson discussed the financial report for 1964. Dr. Williams moved that the financial report be accepted as presented. The motion was seconded by Dr. Tracy and carried.

Mr. Erickson discussed the Stansbury property and the request made by the attorney for Mrs. Stansbury. No action was taken.

The Board of Directors discussed fund raising activities. It was determined that one mailing should be made in May and a second mailing made in December of each year; that an editorial should appear in the Journal; and that another letter to the secretaries of the various district societies be prepared explaining the aims and purpose of the Endowment Association. Dr. Tracy suggested that one member of the Board be appointed to generally over-see all fund raising activities.

Mr. Erickson read a letter from Dr. G. C. Torkildson concerning his donation to the Endowment Association. Dr. Willcockson moved that this matter be checked out with our attorney and if it is approved, that letters be sent to all members who hold notes from the Building Fund, suggesting similar donations. The motion was seconded by Dr. Tracy and carried.

Dr. Walter Hard spoke briefly on the contribution to medical education made by the Endowment Association.

Dr. Tracy suggested that the by-laws be studied for possible revision.

The meeting adjourned at 9:30 P.M.

MEDICAL SCHOOL AFFAIRS SUB-COMMITTEE MEETING

Medical Association Building
Sioux Falls, South Dakota
January 9, 1965

The meeting was called to order by T. H. Willcockson, M.D. at 9:30 P.M. Present for roll call were Drs. T. H. Willcockson, F. R. Williams, J. B. Gregg, G. E. Tracy and Warren Jones. Also in attendance were Drs. A. P. Reding, R. H. Quinn, Dean Walter Hard and Mr. Richard C. Erickson.

The minutes of the previous meeting were approved as read.

Dean Hard spoke briefly on affairs at the Medical School. He requested that any questions concerning the medical school be directed to him, so he will know what areas to cover in future reports. He requested support of the Regents of Education budget at the legislative session.

Dr. Quinn reported on the activities concerning the medical school at the AMA level.

It was determined that another meeting of this sub-committee should be held prior to the annual meeting. The time and place will be determined by the Chairman, Dr. Willcockson.

Dr. Williams moved that the Medical School Affairs Sub-committee recommend to the Council that two $100.00 scholarships, one for a South Dakota freshman student and one for a South Dakota sophomore student, be given; that a $350.00 tuition scholarship be awarded to an incoming South Dakota freshman; that $100.00 be given to assist in sending the SAMA delegate to the annual meeting. The motion was seconded by Dr. Jones and carried.

Dr. Jones discussed the tissue control study report and suggested that it be studied by the members and considered at the next meeting of the committee. This suggestion was accepted and it will be the first order of business at the next meeting. Also to be considered at that meeting will be communications and methods to improve the liaison between the committee and the medical school.

The meeting adjourned at 10:15 P.M.

MINUTES OF THE COUNCIL MEETING

Sheraton Cataract Hotel Sioux Falls, S. D.
January 10, 1965

The meeting was called to order by Dr. H. E. Lowe at 12:40. Roll call was taken with the following doctors in attendance: Drs. J. P. Steele, Paul Hohm, P. P.

Brogdon, A. P. Reding, R. R. Giebink, E. J. Perry, J. J. Stransky, M. C. Tank, L. C. Askwig, F. D. Leigh, J. T. Berry, E. T. Lietzke, T. H. Sattler, J. T. Elston, E. P. Sweet, H. E. Lowe, E. A. Johnson, J. B. Gregg, G. Knabe, C. L. Vogele, R. H. Quinn, and D. L. Scheller.

Dr. Perry moved that the Council dispense with the reading of the minutes of the last meeting, inasmuch as they have been published in the Journal. The motion was seconded by Dr. Tank and carried.

The first order of business was the report of the Public Health Committee.

REPORT ON RESOLUTION OF THE SOUTH DAKOTA SOCIETY OF PATHOLOGISTS

WHEREAS: The primary function of the State Health Laboratory is to offer diagnostic laboratory services to the physicians of the State for the purpose of identification and control of communicable diseases which concern and affect the public health.

The primary function of the State Health Laboratory is spelled out by law according to the Regulations of the South Dakota State Department of Health, Chapter 4 as follows, in part:

4.1 Duties of the Director

The Director of the Division of Laboratories shall make or cause to be made, without delay, all laboratory investigations, analyses, tests, etc., as shall be required by the State Department of Health or any members of the several county boards of health, of any material of any description that may be furnished him for the purposes of determining all matters affecting the public health.

4.3 Data required

No report shall be rendered or examination undertaken when full data is not given; or when the name or address of the patient is not given; or when palpably fictitious name or address or both are given; except when venereal infection is suspected, in which case the patient's initials, date of birth and address may be used for identifying the specimen.

4.7 Examination not required

No specimen received in a container other than those supplied by the Division of Laboratories, or any specimen not prepared in accordance with the directions furnished need be examined except at the option of the Director of the Division of Laboratories.

WHEREAS: The State Health Laboratory has concerned itself with the establishing of test services which do not concern the public health, i.e., RH antibody testing, blood PKU testing, tests for pregnancy.

Committee's findings: The State Health Laboratory does do RH determinations, but not titers, and this service is offered as a convenience for outlying physicians without laboratory facilities so that only one specimen of blood need be drawn and sent into the laboratory. The laboratory does not do PKU testing as a Health Laboratory function. It did participate in a nation-wide study under Dr. Guthrie's direction. This study has since been completed and the Health Laboratory does not do tests for PKU. The Health Laboratory does not do tests for pregnancy.

WHEREAS: The State Health Laboratory has continued to develop and offer, through letters of solicitation, services such as rapid identification of streptococcal disease which are widely available, more accessible and results more rapidly obtainable at the hospital and private laboratories throughout the State.

Committee's findings: The State Health Laboratories had done streptococcal identification for at least the past twenty-five years, which falls within the province of the laboratory. When newer methods for identification are developed, these methods should be utilized and the medical profession so informed. Whether the letter so informing the medical profession was solicitive or informative is a moot question. It is a physician's prerogative to determine where he received the most rapid and best services for his patient.

WHEREAS: Adequate services for biologic and serologic testing in diagnostic problem cases of venereal disease and various viral diseases, including rabies detection, have not been fully developed and have been difficult and cumbersome to obtain.

Committee's findings: After our investigations, we find that the more complicated tests are far too expensive to be considered by the State Health Laboratory in view of the small volume of demand. The State Laboratory does do the various screening tests recommended by the National Serological Council. The accepted standard test, known as the TPI, is done by only three state laboratories, New York, California, Texas, and by some Federal Laboratories. Other viral diseases, such as poliomyelitis, coxsackie, and Echo viruses have been isolated when volume demands such isolation. Single isolations are too expensive to determine under the Health Department's allowed budget. Rabies detection is done by the fluorescent method which is the most modern method, and of interest, the South Dakota State Health Laboratory was the first in the Midwest Area to utilize this method.

WHEREAS: In the opinion of this body, the State Health Laboratory has not concerned itself completely and limited its function to its defined purpose but continually and progressively extended its function beyond the scope and intent of its defined function.

Committee's findings: This again is a moot question, since the purpose of the Health Department is not limited by definition but is prescribed by law. The various members of the Society of Pathology were requested to send their reasons for supporting this paragraph of the resolution. These reasons, with the committee's findings, follow:

1) Serological testing inadequate and there is no program of sending out VDRL controls. — The lack of more extensive testing has been explained. VDRL controls are not routinely sent out. This program can be instituted if the Pathologists wish to have it. In the past, some complaints have been registered, by Pathologists, when the program was in use. While a routine unknown testing program is not currently in effect, unknown and controls will always be sent upon request.

2) Prothrombin tests, pregnancy tests, PKU tests, and serum phenylalinine tests are done by the State Health Laboratory.

   None of these tests are being done by the State Health Laboratory.

3) The State Health Laboratory is criticized for failure to communicate with the physicians regarding the collection and the sending of specimens.

   From time to time, letters are sent from the State Laboratory to the physicians, and when a physician has any doubt as to procedure, this information is always available at the Health Department upon request. An example is the letter sent to all physicians regarding streptococcal identification, for which the department was criticized in this resolution.

4) The State Health Department was criticized for failure to properly investigate an alleged outbreak of amebiasis.

   The so-called outbreak of amebiasis never existed, as records in the State Council Minutes show, but as an extra precaution, a specialist in the field was summoned from the U.S.P.H.S. of Atlanta, Ga., to investigate the matter.

5) One hospital states that it has never received viral reports on paired sera.
The records of the State Health Department show that from 1 January 1962 to now, 23 specimens were received from this hospital and 17 were reported on viruses. There is no record of convalescent serum being sent on the rest.
6) One pathologist questioned the diagnosis of rabies as follows: "I have followed this matter for a number of years and I have never known of the State Health Laboratory at Brookings to call a specimen negative."
Records from Brookings (which is not the State Health Laboratory) show that from 1957 to 1962, 654 positive diagnoses were made as against 1783 negative diagnoses.

BE IT THEREFORE RESOLVED: That the Council of the South Dakota State Medical Association be advised of this problem and that, through the Liaison Committee to the State Health Department, or whatever means necessary, action be taken to assure that the State Health Laboratory disengage itself from matters not concerning the public health and that it develop adequate services within the scope of its original definition and purpose.

The Committee's Findings:

We feel that the State Health Department confines its activities for the most part to its duties as charged by law. We feel that most of the charges brought against the Health Department are due to lack of complete information. For these reasons, we feel that no further action is indicated.

Since this whole matter seems to be a lack of understanding, a mutual expression of ideas and problems would be more in order to produce a harmonious relationship than the pursuing of the militant nature of the resolution.

Respectfully,
Committee on Public Health
N. E. Wessman, M.D., (Chairman)
W. E. Jones, M.D.
Walter Patt, M.D.

(Complete files of the original correspondence may be reviewed at the Office of the State Medical Society.)

After discussion was held, Dr. Elston moved that the Report on Public Health be tabled and forwarded to the proper commission for their information. Dr. Berry seconded the motion and it was carried.

Mr. Erickson reported on the Building Tax exemption and stated that the decision should be given within the next 60 days. Dr. Steele moved that if an unfavorable decision is given, we should take it to the Supreme Court. The motion was seconded by Dr. Elston and carried.

Mr. Erickson discussed the Journal affairs. It was recommended that the Council approve the elimination of the Pharmaceutical section of the Journal. Dr. Sattler moved that we proceed as outlined by Mr. Erickson. The motion was seconded by Dr. Tank and carried.

Mr. Erickson gave an oral report concerning the State Department of Rehabilitation, and discussed a letter from the Department.

DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF VOCATIONAL REHABILITATION
PIERRE, SOUTH DAKOTA

November 18, 1964

Mr. Richard C. Erickson
Executive Secretary
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota

Dear Dick:

This will acknowledge receipt of your letter dated November 13, 1964, wherein, you inquire as to how the medical consultant plan for each of our District Vocational Rehabilitation Offices is progressing, working out, etc.

Frankly, we have not moved with this as rapidly as we had hoped. This, however, is entirely due to our own slowness in making the personal contacts by State Office personnel which we feel is necessary in setting up the procedure in each of the offices. The delay has come about primarily because of my heavy out-of-state travel commitments this fall and also for the reason that our Supervisor of case services is on tentative leave of absence for further training.

The responses received from the officers of each of the District Medical Associations were most encouraging and helpful. The proposal for selection we devised and approved by your office was taken up by each of the District Associations which were contacted. In every instance, we were given suggestions as to how we might proceed and who perhaps should be contacted because an interest had been indicated that these in a particular district would be pleased to serve in this capacity. The cooperation received in reply to our letter request was very much appreciated and certainly paved the way for easy presentation and final selections since all had been appraised of the plan through the media of one of their own association meetings.

To date we have engaged only one of the seven District Office Medical Consultants eventually anticipated. This is Dr. Brzica in our Sioux Falls District Office. This arrangement is working out remarkably well and hopefully all others will follow equally as good. At this point, we have no reason to believe but that it will.

Within the next several weeks, further personal contacts will be made in some of the districts to implement the plan; and by the time of your January meeting, I feel certain others will have been added for some of our remaining offices. However, we do not expect that all seven will have been selected. Our target date to have the procedure instituted in all offices is April 1, 1965.

The assistance in this matter the State Medical Association and your office already has given has been most helpful. Any suggestions I might have as to what further the Association and your office can do to improve this plan is that after all consultants have been selected, that an occasional meeting of these physicians could be encouraged. The purpose would be to further orient them as a group on medical aspects of the Vocational Rehabilitation program, new developments in rehabilitation and also it would afford the medical consultants an opportunity to exchange ideas as to what some have experienced which others may not while serving as a consultant in any one of our local offices. If meetings of this nature can be arranged, either on an individual basis or in conjunction with other meetings, my suggestion would be that these be conducted by our State Office Medical Consultant.

At the moment, I have no other suggestions; but from time to time, we may find it necessary to be in contact with your office for the purpose of disseminating pertinent information, fee negotiations or whatever incidental problems which may or may not develop.

Thank you for contacting me regarding this matter. Hopefully I have provided you with some useful information for your January Council meeting. If there are additional items you have specific questions on, please do not hesitate to contact me again.

We are most grateful for the total acceptance of our proposal. The medical consultant and counselor face to face sessions, we feel, will be most beneficial to all our people and I am sure will result in better and improved services to the handicapped who come under the Vocational Rehabilitation program in our State.

Very truly yours,

Ben F. Hins
State Director
Vocational Rehabilitation

The report was submitted for the information of the Council. No action was taken.

Dr. Lowe discussed the letter which had been received from a physician in the State concerning a proposed survey. After some discussion Dr. Hohm moved that no action be taken on the request and that the action taken at the September Council meeting be sustained. The motion was seconded by Dr. Elston and carried.

Mr. Erickson discussed the proposed revision of the V.A. Schedule. After some discussion, Dr. Steele moved that the South Dakota State Medical Association not sign the Letter of Agreement with the V.A. The motion was seconded by Dr. Sweet and carried. It was further recommended that Dr. Votaw be invited to appear before the Council at the next meeting, if he so desires.

Discussion on the Northwest District affairs was the next order of business. Dr. Lowe discussed the suggestion of having the dentists and veterinarians join their district for combined meetings. Dr. Steele suggested that they be given a chance to try and work out their problems before taking any further action.

National legislation was discussed. Dr. Steele moved that in view of the fact that the AMA had just released a statement in the paper concerning Medicare, that this item be tabled. The motion was seconded by Dr. Tank and carried.

The Council discussed a proposed Council meeting to be held in April. Dr. Steele moved that the Council hold a meeting on April 11, in Huron. The motion was seconded by Dr. Leigh and carried.

Dr. Scheller discussed the resolution from the Seventh District Medical Society concerning annual meetings.

RESOLUTION

WHEREAS: Local, State and regional medical meetings are declining in prestige, with the resultant poor attendance, and

WHEREAS: The proportionate attendance at the Annual Meeting of the South Dakota State Medical Association has gradually and steadily decreased in recent years, and

WHEREAS: Only 184 physicians out of a total of 504 physicians in the State of South Dakota attended the Annual Meeting in 1964, and

WHEREAS: The production of a good, well rounded, interesting scientific session at the Annual Meeting of the State Medical Society is a long, complicated, frustrating, time consuming project, and

WHEREAS: It is an insult to a well known, prominent speaker to invite him to come a considerable distance, only to talk to a handful of semi-interested physicians, many of whom sleep through the lecture, and

WHEREAS: This lack of enthusiasm on the part of the State Medical Society has in many instances resulted in the procurement of participants of lesser renown, who although excellent speakers, do not contribute to the prestige of the meeting, and

WHEREAS: The majority of the cost of the Annual Medical meeting is in large measure financed by the various pharmaceutical houses through the fees paid for their advertising exhibits, and

WHEREAS: The support of the pharmaceutical houses is dwindling and in some instances being withdrawn by the companies due to lack of interest by the physicians,

NOW THEREFORE BE IT RESOLVED:

That the Seventh District Medical Society does hereby request that the Council of the South Dakota State Medical Association direct the appropriate commission of the state medical society to take this matter under advisement, consider the following or other alternatives and bring forth recommendations to the House of Delegates of the State Medical Association at its next meeting.

1) Eliminate the business portion of the Annual State meeting, having only a report to the assembled of business conducted during the year; the business of the House of Delegates and Council being transacted at another time.
2) Assess each member of the State Medical Association a certain "meeting" registration fee each year whether he attends the meeting or not, to pay for the meeting and to stimulate attendance.
3) Hold the Annual Meetings at only one or two cities alternating between these centers so that the meeting places are known well in advance.
4) Canvass the members of the State Medical Association to find out how many plan to attend the meetings each year: How each feels that the meetings can be improved; what each likes or dislikes about the Annual Meetings; Why those who have not been coming to the Annual Meetings do not come and what can be done to interest them in coming.

Suggestions made at the meeting of the Seventh District Medical Society meeting on December 1, 1964.

1) Consider the possibility of having several different meetings, scientific sessions, all going on at the same time at the state meetings, possibly from several different disciplines of medicine and allow the meeting goers to choose the meeting they desire to attend. By this means the specialty groups could have their meetings and the men from the state could go to whichever meeting they desired.
2) Possibly have the state medical meeting only every second year, having the business of the Association carried on by the Council and the House of Delegates.
3) Possibly set up some program, such as that of the A.A.G.P. wherein the members of the Association be required to attend at least one meeting every three years, or some specified interval, or lose membership in the State Association.
4) Solicit the thoughts of the auxiliary of the State Medical Association as to the time, place, etc. of the meetings. The wives are very influential in regard to the attendance of the physicians.
5) Plan the meetings for such time and such location that they will occur after school lets out and are in such place that there will be entertainment for the entire family.

Dr. Steele moved that the matter be taken to the individual districts for discussion and reports to the Council be submitted in April; that the matter be referred to the appropriate Commission at that time. Dr. Hohm seconded the motion and it was carried. Dr. Steele asked Mr. Erickson to write each of the exhibitors to determine their thoughts on exhibits.

Drs. Reding and Quinn gave their reports to the Council concerning the recent meeting of the AMA House of Delegates in Miami. Dr. Steele also commented on the meeting. The reports were accepted by the Council.

The Council discussed the donation to the Science Fairs which is given each year. Dr. Steele moved that we increase our donation to $300.00 which will give $100 to each of the three Science Fairs. The motion was seconded by Dr. Reding and carried.

Honorary membership for Dr. R. T. Maxwell was discussed. Dr. Sattler moved that Dr. Maxwell be made an honorary life member of the Association. The motion was seconded by Dr. Tank and carried.

The Council discussed the possibility of orientation meetings for new doctors in the State. Dr. Steele moved that the matter be referred to the Commission on Internal Affairs for study and implementation. The motion was seconded by Dr. Perry and carried.

The Report of the Budget and Audit Committee was read by Dr. Reding.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

PROPOSED BUDGET 1965-66

INCOME

	1965-66	Previous Year
State Dues	$47,500.00	$43,000.00
Annual Meeting	9,000.00	9,500.00
Interest	400.00	400.00
Miscellaneous		500.00
Salary Reimbursement		400.00
Refunds & Miscell.	1,000.00	500.00
Car Reimbursement	690.00	690.00
Kuehn Memorial Fund		500.00
	$58,590.00	$55,490.00

EXPENSES

	1965-66	Previous Year
Salary, Exec. Sec.	$ 5,400.00	$ 4,800.00
Salary, Other	11,500.00	11,560.00
Social Security	500.00	400.00
Legal & Audit	650.00	650.00
Telephone & Tel.	1,500.00	1,500.00
Office Supply & Equip.	2,500.00	2,400.00
Dues & Subscriptions	1,500.00	1,500.00
Officers Travel	2,500.00	2,200.00
Physicians Travel	2,000.00	
Annual Meeting	7,500.00	8,000.00
Public Relations	4,000.00	4,000.00
Rent	3,000.00	2,400.00
Miscellaneous	100.00	400.00
Postage	1,800.00	1,500.00
Legislative Expense	1,500.00	2,400.00
Benevolent Fund	400.00	400.00
Med. School Endow.	200.00	200.00
Ladies Auxiliary	800.00	1,000.00
Car Expense	1,800.00	1,800.00
Staff Travel	4,500.00	4,000.00
Clinical Path.	1,000.00	1,000.00
Insurance	200.00	
Employment Tax	25.00	
Reserve	2,565.00	2,880.00
Kathryn Kuehn Fund		500.00
Employee Relations	1,150.00	
	$58,590.00	$55,490.00

JOURNAL

INCOME

	1965-66	Previous Year
Advertising	$18,000.00	$20,000.00
Subscriptions	1,200.00	1,200.00
Miscellaneous	600.00	750.00
Refunds	200.00	100.00
	$20,000.00	$22,050.00

EXPENSES

	1965-66	Previous Year
Salary, Editors	$ 1,440.00	$ 1,440.00
Salary, Staff		120.00
Legal & Audit	50.00	50.00
Rent	300.00	900.00
Telephone & Tel.	175.00	175.00
Social Security		6.00
Travel Expense		350.00
Office Supplies	16,620.00	17,000.00
Postage	200.00	200.00
Balance to Surplus		809.00
Balance Due Midwest-Beach 1964-65	1,215.00	1,000.00
	$20,000.00	$22,050.00

GROUP LIFE INSURANCE

INCOME

	1965-66	Previous Year
Premiums	$30,000.00	$30,000.00

EXPENSES

	1965-66	Previous Year
Payments to Ins. Co.	$29,100.00	$29,100.00
Postage	50.00	50.00
Legal & Audit	50.00	50.00
Supplies	50.00	50.00
Balance to Surplus	750.00	750.00
	$30,000.00	$30,000.00

AMERICAN MEDICAL ASSOCIATION DUES

INCOME

	1965-66	Previous Year
Dues payments from doctors	$17,000.00	$17,000.00

EXPENSES

	1965-66	Previous Year
Payments to AMA	$17,000.00	$17,000.00

BUILDING FUND

INCOME

	1965-66	Previous Year
Blue Shield Rent	$ 4,800.00	$ 4,800.00
Association Rent	3,000.00	2,400.00
Journal Rent	300.00	900.00
Bd. of Exam. Rent	300.00	300.00
Nurses Assoc. Rent	900.00	900.00
OAA Rent	2,250.00	2,250.00
	$11,550.00	$11,550.00

EXPENSES

	1965-66	Previous Year
Janitor & Repair	$ 1,900.00	$ 1,400.00
Utilities	1,600.00	1,600.00
Interest	2,600.00	2,600.00
Repayment of loans	2,450.00	2,450.00
Taxes & Insurance	2,000.00	2,000.00
Legal & Audit	1,000.00	1,500.00
	$11,550.00	$11,550.00

It was suggested that an annuity plan be adopted for Patty Butler which will be the same as those plans now in existence for other administrative personnel in the office. Mr. Erickson discussed a budget item of $2,000 for out of state physicians' travel. Expenses would include $30.00 per diem, plus 1st class air travel or its equivalent. Dr. Steele moved that the Council accept the recommendations as presented by the Budget and Audit Committee. The motion was seconded by Dr. Tank and carried. A motion was then made by Dr. Elston to accept the complete budget as read. The motion was seconded by Dr. Tank and carried.

The Employment Contract for Mr. Erickson was read. A motion was made by Dr. Tank to accept the contract. The motion was seconded by Dr. Perry and carried.

Dr. Steele was requested to write a letter to Governor Nils Boe suggesting that a doctor be appointed to the Welfare Commission.

Dr. Reding moved that the Council agenda be mailed to all Commission Chairmen in advance of the Council meetings. The motion was seconded by Dr. Leigh and carried.

The report of the Commission on Medical Service was read by Dr. J. B. Gregg.

REPORT OF COMMISSION ON MEDICAL SERVICE

No meeting of the committee as a whole. Correspondence and committee meetings.

1) Dr. D. L. Kegaries of Rapid City has been notified of the interest of the State Medical Association in the Hill-Burton Advisory Committee Functions. No word from him to date.
2) Rural Health Committee report — no action.

3) Recommendation in regard to the Hospital Utilization Committee and the Insurance Advisory Committee — no report. Information has been obtained.
4) Medical School Endowment Committee and the Medical School Affairs Committee meeting in Sioux Falls, January 9th. Three more applications for loans approved.
5) School Health Committee meeting in Sioux Falls, December 5, 1964. Reports from Dr. Tracy attached.
6) Traffic Safety Committee, no formal meeting. Meetings attended by Drs. Stransky and Jahraus. See Dr. Stransky's letter attached. Every doctor in the State of South Dakota has now received the information on Traffic Safety announced at the last meeting of the Committee and the Editorial for the S.D.J. Med. has been written and will appear soon.
7) Thoughts of a Commission Chairman relating to the Commission System after a brief interval of experience with the Commission System,
   a) Should have a system of checks and balances. It is possible for a Commissioner to have too much authority. Periodic reports to the President and the Council will help keep things in check.
   b) Some persons appointed to the Commission are less than ambitious. How does a Commissioner stimulate action and how does one eliminate the "dead wood."
   c) So that there can be some continuity in the action of the Commissions, should there not be some form of an assistant commissioner or a sub-commissioner appointed when the term of office of the Chairman is about one half over? Either this or retain the old Commissioner on the Commission in an advisory capacity for one or more years after his term of office is over. The Commissioner will have to have a very large fund of knowledge relating to the activity of his Commission and if there is no continuity, it could be a mess.
   d) I believe that the Commission Chairman should probably not remain in office for more than one term. With the program outlined above, there can be continuity in efforts but with a new man in charge, new and different ideas can be brought into play.

John B. Gregg, M.D., Chairman
Commission on Medical Services
South Dakota Medical Association
318-D West Eighteenth Street
Sioux Falls, South Dakota 57104

Dear Dr. Gregg:

The Committee on School Health and Immunizations would like to have record made of the following subjects and these subjects brought to the attention of the Council of the South Dakota State Medical Association.

1. The Committee has carefully reviewed the proposed immunization program being currently published by the State Health Department, State of South Dakota. The Committee does see great merit in a record of immunizations within the state and of its statistical value. Also there is much merit in urging immunizations for children as well as adults in this state.
2. The Committee feels that the State Health Department should correlate its activities with the appropriate committee of the State Medical Association. At present there is little, if any, liaison between the State Health Department and any such committee. As a result, the two organizations are making two different types of immunizations recommendations.
3. The Committee objects to the fact that the State Health Department is sending letters to physicians of the state urging immunization programs without first consulting the South Dakota State Medical Association or its duly appointed committee.
4. The recommendations for immunizations which are currently being sent by the State Health Department are, in the opinion of this Committee, inaccurate and inadequate.
5. This Committee herewith submits a proposed guide for immunizations which might be used by members of the South Dakota State Medical Association and which is generally in accord with the latest recommendations from the American Academy of Pediatrics and the American College of Surgeons.

Respectfully submitted,
COMMITTEE ON SCHOOL HEALTH AND IMMUNIZATIONS
G. E. Tracy, M.D., Chairman
L. H. Amundson, M.D.
J. A. Anderson, M.D.
H. Farrell, M.D.

GET:gb
cc: Dr. Amundson
Dr. Anderson
Dr. Farrell

GUIDE FOR IMMUNIZATION PROGRAM

DPT — Start at 6 weeks to 2 months of age — 3 shots, preferably at monthly intervals.
Boosters at 15 - 18 months of age and q̄ 3 - 4 years thereafter.

Small Pox Vaccination — Start at 6 months to 1 year of age, preferably during the cool season.
Boosters — q̄ 5 to 6 years.
Warning — do not give if patient has active eczema, or if recent history of eczema in family or immediate contact area.
One should be aware of the problems that can exist from mass inoculations for small pox because of contacts with other children who may have eczema in their homes.

Polio — Trivalent — Start at 6 weeks or older — 2 doses at least 8 weeks apart.
Booster — A booster of trivalent vaccine 10-12 months after the initial two doses. Another booster of trivalent should be given at the time of entering school.

If monovalent polio preferred, give types 1, 3, 2, in that order at monthly intervals — start at 6 weeks of age or older.
Booster — A booster of trivalent vaccine should be given as described above.
Warning — Do not give 2 live viruses at the same time. Follow one with another by at least 1 month interval.
1. Rubeovax — measles
2. Sabin Polio oral
3. Small Pox vaccine

} 3 live viruses currently being used.

Rubeola — Live vaccine after 9 months of age with gamma globulin, or killed vaccine if desirable, or if there are contraindications existing for the use of the live vaccine.

D. T. — Continued as booster following D.P.T., series as listed above q̄ 3 - 4 years. If person over 6 years of age, use D.T. as basic series — 3 shots at monthly intervals, then follow thereafter q̄ 3 - 4 years with boosters as above.

General Information:

1. Persons of all ages should keep current with their tetanus toxoid immunizations.
2. Following an injury a tetanus toxoid booster should be given within 48 hours, unless there has been a tetanus toxoid booster given within the previous six months.
   Schuman anti-tetanus globulin is recommended for usage if immediate protection is necessary following a severe injury.
3. Other types of immunizations may be needed for specific reasons and these are at the discretion of the individual physicians. Information for specific immunizations such as typhoid, rabies, etc., may be obtained from the office of the South Dakota State Medical Association.

We would like to stress to the physicians that this program may and probably will need yearly up dating or revisions. Patients should be advised to contact their physicians yearly for advice regarding immunizations.

Respectfully submitted,

SCHOOL HEALTH COMMITTEE
G. E. Tracy, M.D., Chairman
L. H. Amundson, M.D.
J. A. Anderson, M.D.
H. Farrell, M.D.

John B. Gregg, M.D.
1600 S. Western Avenue
Sioux Falls, South Dakota

Dear Jack:

In accordance with your wishes, I am sending you a summary of attendance at two meetings relating to our Traffic Safety Committee.

On November 10, 1964, I represented the State Medical Association at a meeting of the Governor's Traffic Safety and Advisory Group. The group met in Pierre and discussed the legislative needs and the approaches to be taken to them in the upcoming session.

Subsequent to that meeting, I talked with members of the Motor Vehicle Dept. regarding the Medical Advisory Board that our committee has been working on.

On November 16th, Dr. Curt Jahraus from Pierre and I attended the National Conference on Medical Aspects of Driver Safety and Driver Licensing in Chicago. I am enclosing a copy of the program for your review. Curt took part in Workshop I and III and I attended all meetings of Workshop IV. Don Sheppard from the State Motor Vehicle Dept. also attended the Conference and took part in Workshop II. Between the three of us, we covered the Conference pretty well and obtained much information which will be helpful to us in setting up the Advisory Committee.

As soon as we receive copies of the conference proceedings, our committee will meet to finalize plans on setting up the Medical Advisory Committee.

Curt suggested the idea of having a spot on our upcoming state meeting program devoted to this subject. I think the idea is a good one and have written to the chairman of the Program Committee regarding this. I am enclosing a copy of this letter for your information. I'm also sending copies of this material to Pat Steele and to the State office as per your suggestion.

Sincerely yours,
John J. Stransky, M.D., Chairman
Traffic Safety Committee

Dr. Steele moved that the appointment of Dr. E. T. Lietzke to the Board of Directors of the Medical School Endowment Association be approved. The motion was seconded by Dr. Tank and carried. Dr. Sattler moved that the scholarships to South Dakota students at the University Medical School be approved. Dr. Steele seconded the motion and it was carried. Dr. Steele moved that the report of the Commission on Medical Service be approved. The motion was seconded by Dr. Sweet and carried.

The report of the Commission on Scientific Medicine was given by Dr. Knabe. Dr. Tank moved that the report be accepted. The motion was seconded by Dr. Steele and carried.

The report of the Commission on Legislation and Governmental Relations was read by Dr. Quinn.

RECOMMENDATIONS TO THE COUNCIL FROM THE SUBCOMMITTEE ON LEGISLATION

BILLS TO BE SPONSORED BY THE ASSOCIATION

1. Concurrent Resolution asking for a Legislative Research Council Study on the Industrial Commissioner's Office.
2. Bill amending the law concerning Insanity Hearing Form.

BILLS TO BE ENDORSED BY THE ASSOCIATION

1. Bill to be introduced by the Hospital Association asking for unlimited coverage under Workman's Compensation.
   The Committee recommends that the Medical Association join with the Hospital Association in promoting this bill and that it also include unlimited medical coverage.
2. Bill to change Autopsy Law.
   The Committee recommends that the Medical Association endorse the bill to be submitted by the Hospital Association clarifying the authorization of autopsies.
3. Expansion of MAA Program and transfer of OAA Nursing Home patients to MAA.
   The Committee recommends that the Association endorse the bill expanding the MAA program to be submitted by the Welfare Department; that the Association oppose the bill transferring OAA nursing home patients to MAA, with the suggestion that perhaps some OAA recipients cases could be re-evaluated and that they be placed on MAA, if they are eligible.
4. Driver Licensing Law.
   The Committee recommends to the Council that the Association endorse the bill to be submitted by the Motor Vehicle Department eliminating all exemptions on driver licensing examinations.
5. Bills to be presented by Dr. Behan at Yankton State Hospital concerning alcoholic centers.
   The Committee recommends that the Council give a general endorsement to the suggested bills to be submitted by Dr. Behan concerning improvements at Yankton State Hospital.

GENERAL RECOMMENDATIONS

1. The Committee recommends to the Council that the State Association recommend that Dr. D. L. Kegaries be re-appointed to the Hill-Burton Advisory Committee, and that three or four alternate nominations be submitted to insure that physicians have adequate representation on this Advisory Committee.
2. The Committee recommends that the matter of a revision in the suicide law be deferred at the present time; that the problem be referred to the Commission on Scientific Medicine (Sub-Committee on Mental Health) for definite ideas on what it would desire in a law.
3. The Committee recommends that a proposed bill to be submitted by the Hospital Association to require that all coroners be medical doctors not be introduced at the present time; that action be deferred until the complete revision of the coroner's law can be re-introduced after an interim study between the two Associations.

Dr. Hohm moved that the report be accepted. The motion was seconded by Dr. Berry and carried.

Dr. Scheller gave the report of the Commission on Internal Affairs. Dr. Perry moved that the report be accepted. The motion was seconded by Dr. Sweet and carried.

The report of the Commission on Communications was given by Mr. Erickson. Dr. Perry moved that the report be accepted. The motion was seconded by Dr. Tank and carried.

Dr. Cosand was not present to report for the Commission on Liaison with Allied Organizations.

Mr. Erickson discussed the Medical-Legal Conference which is to be held in Las Vegas, Nevada. The Chairman of the Commission on Liaison with Allied Organizations will select the delegate.

Dr. Steele commented on the ethics of our physicians and suggested that information be sent out to all physicians on the ethics of the profession. It was also suggested that the incoming president meet with the past-president and commission chairmen in determining commission appointments.

The meeting was adjourned on motion at 4:30 P.M.

MEETING OF SUBCOMMITTEE ON LEGISLATION

Medical Association Building

January 9, 1965 1:30 P.M.

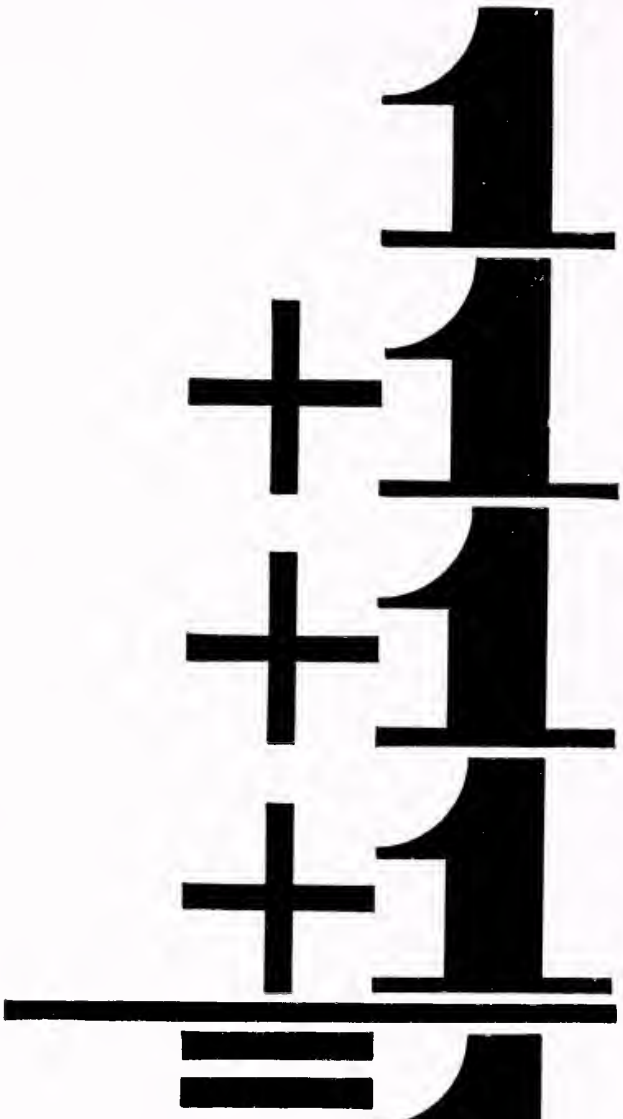
The Meeting was called to order at 1:30 P.M. Present for roll call were Drs. H. R. Wold, Russell Orr, R. J. Bareis, Robert Quinn. Mr. Warren May, attorney for the Association, and Dr. A. P. Reding were also in attendance. After considerable discussion and study the subcommittee prepared a report to be submitted to the Council on January 10. This report is contained in the Council minutes and outlines the legislative program for the State Medical Association for the coming year.

The meeting adjourned at 5:00 P.M.

PHYSICIANS AID-CARLSON FUND

A memorial fund for the family of Dr. Paul Carlson, one of 50 American and Belgian hostages massacred by the Congolese rebels, has been established by the Los Angeles County Medical Association and the Los Angeles County Physicians' Aid Association. All donations received will be used for Dr. Carlson's wife and two children, ages 7 and 9. All expenses for operating the Fund will be borne by the founding organizations.

Checks should be made out to the **Physicians Aid-Carlson Fund.** The address is 1234 North Vermont, Los Angeles 29, California.



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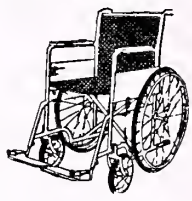
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Pop's Proverbs

Life is a trap from which no one escapes alive.

NEWS NOTES

Leonard Tobin, M.D., Mitchell, was honored recently by the Emery Community Club. Dr. Tobin was presented with a plaque engraved "in appreciation of conducting immunization clinics in Emery for 18 years — from 1946 to 1964."

* * *

Walter M. Gysin, M.D., medical director of the Lake Region Mental Health Center at Watertown, has joined the staff of the Brookings Area Guidance Center as a part-time psychiatrist. Dr. Gysin replaces Dr. Henry Davidson of Sioux Falls who had served in a similar capacity since September of 1963.

* * *

The 1965 officers of the Black Hills District Medical Society are as follows: **Dr. Gordon Paulson,** President; **Dr. Harold Frost,** Vice-President; and **Dr. John Hewitt,** Secretary-Treasurer.

* * *

The National Tuberculosis Association has announced that the 1965 meeting of the American Thoracic Society will be held in Chicago, Illinois, May 31 to June 2, 1965.

During the December meeting of the Watertown District Medical Society, a new slate of officers was elected. They are as follows: **T. J. Wrage, Jr., M.D.,** President; **D. N. Fedt, M.D.,** Vice President; **E. H. Heinrichs, M.D.,** Secretary; **P. S. Nelson, M.D.,** Delegate.

ACADEMY OF PEDIATRICS TO HOLD SPRING SESSION

The American Academy of Pediatrics will hold its Spring Session April 26-29, 1965, at the Americana Hotel, Bal Harbour, (Miami Beach), Fla. Interested physicians may write to the American Academy of Pediatrics, 1801 Hinman Avenue, Evanston, Illinois 60204, for a preliminary program and housing and registration forms.

POSTGRADUATE COURSE POSTPONED

A postgraduate course sponsored by the American College of Physicians, originally scheduled for June 14-18, 1965, has been postponed until November 1-5, 1965.

The Course is No. 18, "Psychiatry for the Internist." It will be held at the University of Colorado Medical Center, Denver, Colo., with Herbert S. Gaskill, M.D., Denver, Colo., as director.

AMERICAN BOARD OF OB-GYN

Applications and letters of request from previous applicants requesting to be scheduled for the forthcoming Part I examination of this Board to be given July 2, 1965 will be accepted in the Board office up until the closing date of February 28, 1965. Applications and letters of request postmarked after that date will be returned to the sender.

Application forms and Bulletins may be obtained by writing to the office of the Secretary — Clyde L. Randall, M.D., American Board of Obstetrics and Gynecology, 100 Meadow Road, Buffalo, New York 14216.

Servicemen applying for the Part I examination are requested to submit the name of their Commanding Officer.

S.M.J.A.B. MEETING

The State Medical Journal Advertising Bureau, Inc., held a meeting outlining the activities of the Board on November 29, 1964. The following Officers were elected unanimously for 1965: President, **Frank B. Ramsey, M.D.;** Executive Vice-President, **Adelaide K. Davis;** Secretary, **Perry R. Ayres, M.D.;** Assistant Secretary, **Wilneita F. Kovacs,** and Treasurer, **Adelaide K. Davis.**

CARL JOSEPH PINARD, M.D.

1890—1965

Carl Joseph Pinard, M.D., age 74, was a veteran physician of Gary, South Dakota. Services for him were held recently at St. Peter's Catholic Church in Gary.

Born in Jefferson, South Dakota on June 18, 1890, Dr. Pinard graduated from Creighton University School of Medicine, Omaha, Nebraska in 1911.

Dr. Pinard practiced medicine in Monroe until 1915 when he moved to Gary. He would have celebrated 50 years of medical practice in Gary in March of this year.

He is survived by his wife and four sons.

NEWS NOTES

* * *

The Pierre District Medical Society held their annual election of officers. The new officers are as follows:

President: **R. J. Zahaki, M.D.,** Vice-President: **Barbara Spears, M.D.,** Secretary-Treasurer: **J. T. Cowan, M.D.,** Delegates: **R. C. Jahraus, M.D.** and **H. E. Werthmann, M.D.,** and Alternate Delegates: **C. L. Swanson, M.D.** and **S. B. Simon, M.D.**

* * *

The American College of Physicians is going to present a Postgraduate Course No. 11 Cardiology, on March 15-19, 1965 in Atlanta, Ga. Full information can be obtained by contacting Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

Dr. V. C. Marr, Estelline, attended the American Academy of Dermatology in Chicago, in December.

DRS. REDING AND QUINN HAVE NEAR MISS

Dr. A. P. Reding, Marion and **Dr. Robert H. Quinn,** Sioux Falls had a harrowing experience aboard a jet airliner last week while enroute to a meeting of the American Medical Association in Miami Beach, Florida.

The jet developed trouble in the hydraulic system of the landing gear and could not make a scheduled stop at Tampa but proceeded toward Miami. The crew worked rapidly trying to release the mechanism so that it could be lowered manually, however, it was not sure if the wheels would lock when they touched down. The passengers were alerted to prepare for a crash landing . . . . secured seat belts, removed eye-glasses and cushioned themselves with the pillows the stewardesses handed to them. The plane landed, the wheels locked into place, and 104 tense passengers began to relax. As they taxied toward the terminal, the people noticed all emergency equipment, the fire trucks and ambulances, that had been brought out to the far corner of the landing strip where the jet landed.

Dr. Reding said the worst part of the incident was knowing for almost an hour that they would have to prepare for a crash landing.



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• NOTICE •

THIS WILL BE THE LAST ISSUE OF THE JOURNAL WHICH WILL INCLUDE A PHARMACEUTICAL SECTION.

DUE TO THE SMALL NUMBER OF PHARMACEUTICAL SUBSCRIPTIONS (55 this year) THIS SECTION MUST BE ELIMINATED.

THOSE SUBSCRIBERS WHO HAVE PAID $2.00 FOR THE COMING YEAR WILL BE REIMBURSED THROUGH YOUR EXECUTIVE SECRETARY.

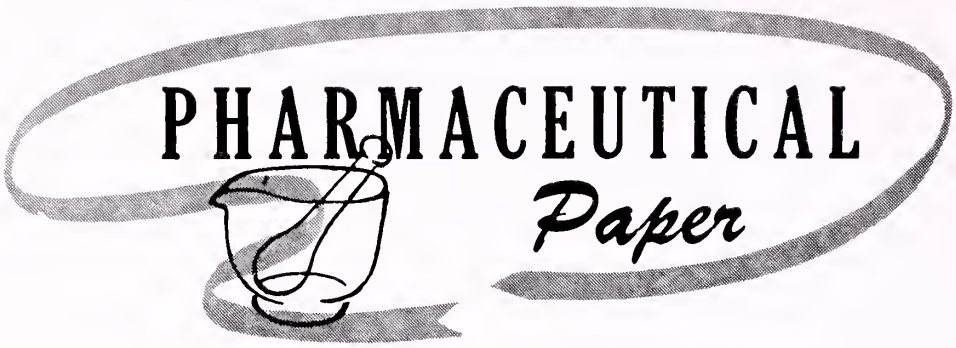
THE JOURNAL WISHES TO THANK THOSE OF YOU WHO HAVE SUPPORTED THIS PUBLICATION IN THE PAST.

RICHARD C. ERICKSON
BUSINESS MANAGER

PHARMACEUTICAL SECTION



GARY OMODT, PH.D.
EDITOR
College of Pharmacy
South Dakota State University
Brookings, South Dakota



THE PHARMACIST AS A THERAPEUTIC CONSULTANT*

by

Phillip A. Greth**

The past 20 to 30 years have produced a tremendous change in the pharmacy profession. We have come from the time when the compounded prescription was quite common, to the present, when the compounded prescription is almost a rarity. The number of new entities has increased at such a rate that one-third of the prescriptions written today could not have been written five years ago. These changes have produced many questions in recent years especially concerned with what role the pharmacist should assume today and in the future. I feel that becoming a therapeutic consultant, and the acceptance of such a challenge by the pharmacist, can very well make the difference in the future between being merely a number on the government payroll or a professional person.

I make this statement because it appears to me that socialized medicine is slowly but surely taking over in the United States. There is no doubt that the pharmacist will always be needed on the medical team, but there **is** doubt as to what exactly his position will be if socialized medical care should become a part of our system. I think that the pharmacist must make a decision now to engage in activities beyond the usual mechanical duties of pharmacy. Whether I am right or wrong in my prediction about socialized medicine makes little difference relative to the fact that the pharmacist must change his outlook toward his responsibilities and positions, both now and in the future.

Becoming a drug consultant certainly does not happen overnight and often not for many years. It involves continual study and constant reading and evaluation of current literature. The responsibilities go beyond the simple relaying of printed material from one source to another. One must be able to go further than the printed word and be able to intelligently interpret and appraise the literature in his field.

The need for pharmacists to become therapeutic consultants to the medical profession is obvious. In 1963, the average physician received over **5,000** mailings of drug advertising material which certainly presents some staggering problems. Time does not allow the physician to follow all reports in the medical journals or detailed information from the pharmaceutical manufacturer. In the resulting confusion, he is apt to accept without question the claims of the pharmaceutical manufacturer. This statement can, of course, be applied to the pharmacist also. More often than not, we are guilty of not taking extra time to dig into the background of a drug and learn for ourselves all the details we should know about it.

Not only must the pharmacist consider his role as a consultant to the medical profession but he also has a responsibility to the public. In my relatively short time out of school, the one thing that I have noticed most has been the complete lack on the part of the public of even

*Presented at the Fall Pharmacy Seminar, College of Pharmacy, University of Iowa, Iowa City, October 2, 1964.

**Drug Information Pharmacist, University of Iowa Hospitals, Iowa City.

the most basic information about drug therapy and its dangers and limitations.

The majority of those who patronize a pharmacy or who have a prescription filled, rarely think of the responsibilities of the pharmacist. They do not realize that he must share the burden of responsibility or accept the entire blame for an error in the filled prescription. How many of the lay public know, and indeed, how many physicians and nurses recall, that the pharmacist must check the prescription ingredients for chemical, pharmaceutical, and pharmacological incompatibilities, and in addition must verify the doses to ascertain that they are all within the tolerated limit for the age of the particular patient? These things are either unknown or forgotten except by those of us who must every day accept such responsibilities.

Our willingness to educate and inform the public should have priority of equal importance to that of assisting the medical team. It is this service to the medical profession and the public that makes pharmacy a profession and sets it apart from merely exchanging a commodity for the appropriate remuneration.

Our academic background in pharmacy ideally suits us to serve in the capacity of a consultant. We have an excellent background not only in the usual pharmaceutical courses, but also in biochemistry, inorganic and organic chemistry, physiology, zoology, and other courses too numerous to mention. We are, of course, not experts in any one of these related fields, but this in no way hinders our ability to interpret and decipher medical literature. On the contrary, it is to our advantage to have this widely diversified background. It is not necessary, for example, to be an expert pharmacologist and know the techniques of setting up an animal for blood pressure determinations, to be able to interpret the results of such a test. Generally, in an article concerning a drug, the opinions and results of tests by many experts are given, and it is at this point that our general knowledge and judgment comes into play in interpreting the validity and the usefulness of the drug item.

Our somewhat focal position in which all drug orders are channeled through us, places us in the ideal position to act as liaison between the drug manufacturers and the medical profession. Our position makes it possible for us to be objective in our appraisal of rational drug therapy, relative effectiveness, side effects, and other factors affecting drug action. Unlike the detail man, who is naturally biased and economically dependent upon the manufacturer, we are not obligated in any way.

The professional practitioner has been somewhat slow in utilizing good communication to support his judgment in practice. Your experience has more than likely shown you that many physicians stick to a relatively small number of drugs in their daily practice and many times will not pick up quickly the use of modern, more effective drugs. Let me emphasize, however, that this practice should neither be condemned nor praised. The bewilderment that surrounds our knowledge or lack of knowledge about drugs and what they can and cannot do, often makes it wise to use those drugs with which we are more familiar, rather than plunge headlong into the use of new and little tested drugs.

We cannot hope to eliminate this problem altogether but we must become more involved in the collection and interpretation of medical literature. The physician needs assistance in providing rational drug therapy and we are in a position to provide that assistance.

Before discussing in detail the possible methods for handling the mechanics of drug information, let us first consider the objectives of drug consulting. As I pointed out earlier, both the physician and the pharmacist are barraged with a large amount of drug advertising, and it would be well for us to evaluate this advertising as to its usefulness. First, we should evaluate this material as to whether it has informational value or if it is pure advertising.

For the sake of review, it might be well to cover some basic principles to follow in the evaluation of such information:

1.) Toxicity of a drug is almost always the main concern of the pharmacist and physician and more important, of the patient himself. For a piece of literature to state that the drug has low toxicity or few side effects is relatively meaningless without specifically stating what the side effects are and their frequency. It is necessary to closely note the frequency of side effects, because often this is the most important information obtained from this section of the literature.

2.) Potency is another product claim that must be scrutinized closely. The increase in potency of a drug has little meaning if it does not in other ways affect the efficacy of the drug; such as, reducing side

effects, increasing the scope of activity, or reducing the cost.

3.) The statistical reports are also important and merit more than a casual glance. Very elaborate graphs can be easily misleading and once examined closely may not mean what a quick look would indicate.

4.) In general, if a piece of literature lists references, the validity is greater than where no references are given. One must, however, be cautious not to accept the validity solely because of the presence of a large number of references.

5.) Noting the effectiveness of a particular drug by various routes and forms of administration can be important.

6.) It is wise to look for claims made for a drug or series of drugs that professional knowledge tells us are not necessary. It is quite obvious that when a claim such as this is made for a product, the manufacturer is trying to make up for shortcomings of his product. When this type of tactic is used, it is a good idea to look much closer at the product involved. For example, a recent catalogue I saw concerning generic brand drugs made a lot of fanfare concerning the fact that their products were assayed and the assay number stamped on each label as proof of assay. It is quite obvious that any drug product must be assayed as a normal routine quality control procedure. It is this type of information that the physician may not be aware of but of which the pharmacist is well aware. This is a good example of our professional knowledge and background coming into play in interpreting the validity of drug literature. The lay public is often the target of this particular type of advertising. This area might well be where we can perform one of our most useful services to the public.

The pharmacist should always be ready to provide to the physician routine drug data such as dosage forms available, dose, price, and therapeutic uses. But even more important, we have to be ready to provide technical and detailed information concerning such points as mode of action, relative effectiveness in relation to similar compounds, side effects, and pharmacological incompatibilities.

Now comes the question: How does one physically handle the mechanics of therapeutic consulting? To begin with, it is essential to have a basic library for drug information. It should contain standard pharmacy and manufacturers' texts such as the USP, the Merck Index, manufacturers' catalogues, and others with which you are all familiar and already have in your pharmacies.

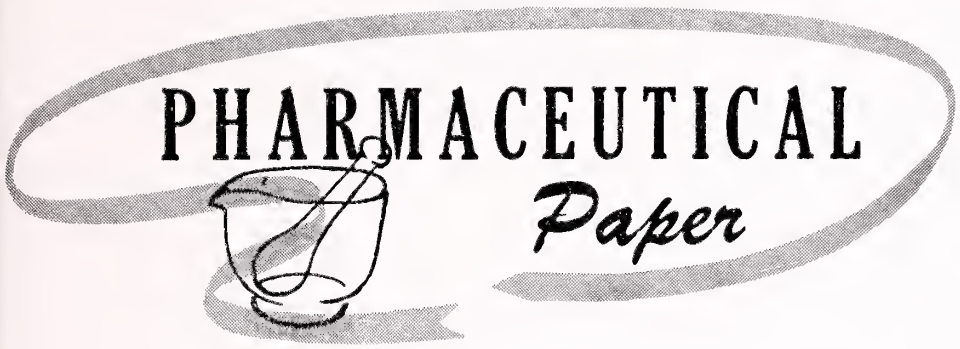
In addition, it is important to go beyond these standard references in setting up the small drug store information center. Manufacturers' promotional material can be a good tool for the pharmacist and is usually obtained at no cost. This type of information can often be set up in a file system for fairly fast retrieval either by drug name, therapeutic use, or whatever may fit the individual desire.

A thing to come in the future will be the availability of large drug information centers such as will be set up at the University Hospitals (Iowa City, Iowa) that I am sure will be available to answer any inquiries from pharmacists as well as doctors. These centers may eventually be connected to other centers throughout the country possibly by teletype so that in the not too distant future you should have at your disposal, information storage systems that you could never hope to set up in your own stores.

Probably the most important factor in becoming a therapeutic consultant is constant studying and evaluating drug literature day in and day out. Attendance at seminars and refresher courses is an absolute must in keeping up with the growth of medical literature and new developments.

Lastly, we must not forget our obligation to the public and our role in informing them about drug therapy. I feel our major objective should be that of clarifying the pseudo-false advertising and its gimmicks to the public. I am sure that if we are honest in our appraisal of over-the-counter remedies and drugs to the public now, it will pay off large dividends in the future.

Let me conclude with a statement by Dr. Edmond Peligrino, director of the Department of Medicine at the University of Kentucky Medical Center. He has this to say about pharmacists in relation to the medical team: "His old function of compounding has largely been replaced by industry and he must renew his place in the future with respect to drug information. He must redefine his function. It will not automatically be given. The clinician needs help in rational drug therapy."



PHARMACY — A CHOICE PROFESSION

by

Garrett J. Gross*

Helping someone choose a career is a difficult thing to do, especially in our modern times when there are so many different fields one can pick from. I feel that there are many things about a vocation one can point out to another person, but probably the most important being the reasons for choosing the specific line of work. This is why I would first like to enumerate my reasons for entering pharmacy.

I will have to admit that pharmacy held an excellent rank in my eyes from the start because of the fact that my father is a pharmacist. I was put to work in our drug store at an early age doing odd jobs which helped cultivate my interest in pharmacy. In my high school years, I learned to appreciate the profession even more. Watching dad at home and at work, I could see how important his work was to the welfare of the folks in our community, and what a fine standing he held in our town as a result of this. It made me proud to know I had such a father. The clincher in my choice of pharmacy came when I visited the College of Pharmacy on Scholarship Days during my senior year in high school. The Dean of the College and one professor were in charge of an hour lecture on pharmacy which I thought was excellently prepared for its purpose of introducing students to pharmacy. Afterwards, the Dean expressed an interest in me which is certainly one of the more important ingredients a prospective student is looking for in choosing a school. I was certain that after this visit, I would enroll there the coming fall, which I did.

In my case, embarking on a career in pharmacy wasn't as difficult a decision as I am sure it must be for most students who don't have the knowledge of the profession that I had. In fact, my decision was an easy and enjoyable one to make. This brings us to the problem of recruiting students to our profession, and it is a big problem indeed. What can be done to improve on this? How can we make prospective students aware of pharmacy as a great profession? These are a few of the questions that I would like to touch upon.

First of all, let us take the students at the high school level, the most important group for our purposes. I know that in my high school, I rarely heard the word "pharmacy" mentioned in four years. We need to obtain the help of the high school teacher if we are to interest high school students in pharmacy. Teachers and guidance counselors should be encouraging good science students to consider pharmacy as a possible career. The parents of these students should also be informed of this possibility for their children. The community pharmacist can enter into this picture by helping explain pharmacy to interested parents and students. Perhaps during National Pharmacy Week each year the community pharmacist could give a talk at the local high school, and talks at various civic organizations, thus making the whole community

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more aware of what pharmacy is really all about. Literature relative to the field of pharmacy should also be available to the students. The college or colleges of pharmacy in the area could assist by sending brochures to all high schools of the state, to be passed around to the students. So-called "recruiters" could be sent from the colleges to talk to interested students. If recruiting is done in basketball, why not in pharmacy? These are just some of the weaknesses I noticed in pharmacy recruitment while I was in high school. The unfortunate fact is that these problems still remain in many areas. This must be improved upon if pharmacy is to get its share of high caliber high school students.

Just because a student enrolls in a college of pharmacy doesn't mean that all problems are solved and he will automatically graduate in five years, a fully qualified pharmacist. Many problems arise in the first years of college. What can a pharmacy student reply when someone at home asks him how he likes pharmacy, when he usually will not be taking any pharmacy courses until the third year of college? I know that this question was somewhat confusing for me to try and answer. I think that we need ways to create an interest in the profession during the first years. By doing this, the students that feel they are in the wrong field could drop out or switch majors and the students that like pharmacy could and would go at their work with new vigor and initiative. In what ways can this be accomplished?

In my first year at college, we had one quarter of Pharmacy Orientation, and that was all. I felt that possibly such a course should be continued throughout the first year. It could consist of a one-credit course which would meet once a week. In this way, guest speakers could be brought in and members of the pharmacy faculty could take turns at the other sessions, thus making it possible for the student to become acquainted with all the instructors and to receive an introduction to the courses that they teach. Perhaps a few periods could be spent visiting local pharmacies and hospitals in the area to acquaint the students with actual working situations. The student branch of the APhA can also help by holding meetings throughout the school year where the freshmen and sophomores would have a chance to meet and talk with the upper classmen. This uniting of the college would help many students feel more at home. Urging attendance at APhA student branch meetings would help the student come into closer contact with the faculty in a less formal atmosphere than in the classroom. Another method of holding the student's interest in pharmacy is to encourage summer employment in a drug store. I realize that this is not possible for everyone but I feel that it is very valuable training being on the job and working in actual situations such as will occur after graduation.

Even though the early college years are the most important ones in keeping up a student's interest, the later ones cannot be overlooked. Many students are not very familiar with work in a drug store or hospital or what opportunities await them even at the time they graduate. What can be done to remedy this? Many colleges of pharmacy sponsor trips every one or two years to pharmaceutical manufacturing companies. This helps create an interest in industry for some students, and for others this will be an experience to remember and talk about the rest of their lives. It would show all the students where the products they will be dispensing are made and how they are manufactured.

Another way to keep the students interested would be to have various speakers visit classes. Representatives from government and industry could inform the students of related opportunities in pharmacy and the type of work that would be required. Retail pharmacists, detail men, and hospital pharmacy workers should be invited to describe their positions in the field of pharmacy. In this way, students would be more positive of the type of work they would like to do and they would enter areas in which they would be the best qualified.

As my last topic of discussion, I would like to give a pep talk for pharmacy. I want to bring out what pharmacy means to me after four and one-half years of college, and what it could mean to you, as a future student or present student.

The thought of holding the health of others in my hands is the feeling that means the most to me as a pharmacist. This is a great responsibility, one not to be taken lightly. Many people say that today, a pharmacist is not a professional person. All he has to do is "count and pour" with the emphasis on the "counting of money." This is not true. I certainly would not want my prescription filled by an unqualified person and no one else would either. We all want a well-trained person, trained by an accredited college of pharmacy, to do our dis-

pensing. A very sincere feeling that I have as a pharmacy student, is the knowledge that I **am** in a profession, and only a select few are admitted each year. This gives one a feeling of security and deep pride. Pharmacy also gives one a chance to set up a business of one's own, which is the goal of most pharmacists.

An additional aspect of pharmacy which I especially enjoy, is becoming acquainted with all varieties of people. I have met many people during my work in the drug store. Many of them come to value the pharmacist's friendship and seek his advice on a wide variety of subjects. This is truly a great opportunity to serve your fellow man.

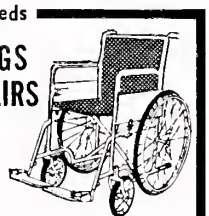
In closing, I would like to say that the field of pharmacy offers a wonderful opportunity to learn an art. It is a field that requires great precision and accuracy. People's lives are at stake many times. Finally and perhaps most importantly, I feel that to be a good pharmacist, one must love his fellow man first, love his work second, and be proud to be called a pharmacist.

TO PAY THE PIPER

Revenue from advertising companies represents a very important source of income relative to the support and operation of professional journals. In some cases, it may virtually be the only financial support. Revenue from subscriptions is usually very meager compared to advertising revenue. Thus, many journals are quite dependent on their advertisers for their very existence. It is interesting to examine the amount of advertising contained in this **Journal** over the period of the last ten years. In order to obtain a rough approximation of this, the number of pages devoted to advertising in one representative issue (December) of each year from 1955 through 1964 was counted. The results are as follows:

1955 — 31 pages
1956 — 40½
1957 — 61½
1958 — 61
1959 — 82½
1960 — 59
1961 — 49
1962 — 41
1963 — 34
1964 — 27½

It can be seen that the amount of advertising increased to 82½ pages in 1959 and then continued to decrease to 27½ pages in 1964. Since advertising in this **Journal** is apparently at a low, journal income is in a **serious state of affairs.** What is the cause of this drop-off in advertising? Could it be related to the Kefauver investigations? Could it be related to small firms merging into larger firms with a resultant decrease in the number of advertising spreads? Is there less to advertise about — in this time of economic prosperity? Whatever the reasons, the fact remains that something **must** be done relative to **journal** income and **journal** expense. During the last half year, the number of published pages has been reduced. For example, news items have been limited to one page. An increase in the number of subscriptions will not help much. It may be necessary to **delete the Pharmaceutical Section** of this **Journal.** This, of course, would decrease the number of subscriptions relative to pharmacists but the advertising firms are predominantly pharmaceutical manufacturers that, very understandably, are interested in the prescribing habits of physicians and therefore direct their ads to the physicians. Theoretically, deletion of the Pharmaceutical Section should cut publication costs without appreciably affecting advertising income. The **Journal** would continue to be published as the **South Dakota Journal of Medicine.** It appears that this action will be necessary. The **Journal** cannot continue to operate on a deficit budget. It is difficult if not impossible to direct any blame towards anyone for these unfortunate circumstances. It is simply too bad that this **Journal,** which is nationally recognized as successfully combining medicine and pharmacy, will have to be modified so as not to include pharmacy.

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EDUCATION AND THE CHANNELS OF PHARMACEUTICAL DISTRIBUTION

by

Louis C. Zopf*

In our own community which we travel daily, the avenues parallel each other and are frequently and somewhat regularly intersected by streets. It is helpful if we are familiar with the locations of both avenues and streets and especially expedient if we have an understanding regarding their direction, deviations from the normal pattern, and the numbering system of specific locations. The more information we have regarding the community's avenues, the more convenient and pleasurable our daily routine becomes. We need an understanding of areas of special caution, of districts with special design and function, that is, if we are to move about with any semblance of order. Pharmacy, too, has a patchwork pattern of avenues, lanes, and plazas. Where they touch, intersect, or fuse into a plaza is not as readily delineated as are our ribbons of concrete which form the highways of our communities.

What I am suggesting, is a better understanding by us of the directions of pharmacy's avenues, the frequency of the intersections of the profession, and the problems which will occur as these terminate or fuse into a plaza. There can be no disagreement that today's practitioners of pharmacy must have a complete understanding of all the facets of the profession. All organizations defined as pharmaceutically oriented must understand the objectives and purpose of the other groups which form integral segments of the total circle which we know as pharmacy.

It was the judgment of the NWDA to establish an advisory council within their committee structure whose talents resided in pharmaceutical education. Their Executive Committee may call upon our group to learn more details of the pharmaceutical education program and also to use us as a sounding board for matters concerning their professional services. We were pleased and complimented by this expression of interest in the present educational program and its future expansion. This affords education and pharmaceutical service an opportunity for understanding each other's problems as well as furnishing a medium for an exchange of new ideas.

The wholesale druggist is representative of a group of individuals having continuous contact with every practicing pharmacist in the United States. Through these intimate pharmacy contacts, the wholesaler also has association with the high school youth of the community from which education draws the future candidates for the profession. The wholesaler's interest centers around that individual who legally is classified as "a privileged person to practice pharmacy and to assume certain public

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health responsibilities." It is understandable that wholesalers therefore are an important liaison group for the profession of pharmacy and certainly are entitled to assistance in the area of pharmaceutical education's thinking and the direction of its future goals.

Let us go back to the simile of the streets of the communities. The labels of pharmacy's avenues and streets are as multiple as the specialties represented at this national meeting plus certain groups who have chosen not to associate. As individuals, we, on occasion, join in a melee because of an impetuous, emotional stimulus. We shout for improvement when it would be wiser if we met around a council table to benefit from the research, interest, and problems of the other avenues of the profession.

Pharmacy cannot expect preferential treatment because it is pharmacy. The profession is not licensed for its own protection but for the protection of the public. It will mature only when its needs for a unified approach of the avenues of pharmacy are based on rational and reliable data. Each of us must be dedicated to our own specialized area but an attitude of selfishness will bring penalty upon the rest of the profession and particularly to those whom we serve. It is easy to ridicule and condemn when one does not have the responsibility of implementation or the benefit of the true facts. Pharmacy has one outstanding attribute — it can depreciate its public image and professional regard easier than any other group. Much of the pharmaceutical community's misunderstanding stems from lack of communication between our avenues and streets. I agree, the NWDA took a calculated risk when they chose a committee of deans as their Pharmaceutical Advisory Council. 'Tis said, "there is nothing lower than a dean." I remind you, however, that as presently constituted, the Council is composed of individuals with many years of drug store and hospital apprenticeship, pharmaceutical sales work, and other experiences from the avenues of pharmacy.

The pharmacist is the nucleus of our concern. Pharmaceutical industry, pharmaceutical distribution, pharmaceutical education, pharmaceutical associations, and therefore, pharmaceutical secretaries, function around, through and with this individual as the keystone of their efforts. Unless those persons licensed as pharmacists are expertly, professionally qualified and competent economically and socially, the profession will suffer and the representative groups with it.

In 1895, Roentgen discovered the X-ray but if the information relative to X-rays had stopped there, we would not have nuclear pharmaceuticals. Twenty years ago, pharmacognosy was ridiculed as obsolete. Pharmaceutical distributors and pharmacists of the nation practically deleted, as was right, crude drugs from their inventories. Yet, if we had accepted this as the demise of a discipline of pharmaceutical education, we would today be without many of the newer synthetic wonder drugs. It was the modernization of the pharmaceutical curriculum, the weeding of the pharmacognosy program, that made phytochemistry possible. Go back to curare, then bring in the yams and sarsaparilla (source of hormones), add to this rauwolfia and you readily understand that unless continuous improvement in educational qualifications persisted, the fruit would die on the vine. The discoveries alluded to here were made through the delineation of active ingredients from old vegetable drugs. These in turn served as the starting point for the pharmaceutical chemist in the building of synthetic configurations with similar activities but fewer side reactions. The products of the pharmaceutical laboratories have changed from variable compounds and mixtures to the production of isolated, specific, controlled, sterile dosage forms.

Physical pharmacy, pharmaceutical chemistry, pharmacognosy, biological chemistry and pharmacology — these subjects are not static and therefore the pharmaceuticals must change. Scientific achievements amplify man's mind and have a tendency to facilitate his control over certain principles. There is need, frankly, to have regard for the new products because of their potential biologic impact. The modifications of their pharmaceutical configuration will herald new therapeutic treatments. You do not find all this information in the "enclosed brochure" of the package.

What will the distribution patterns be? Will the future drugs and pharmaceuticals be preserved in dry ice because of their physical sensitivity? Will they be enclosed in hermetically sealed opaque containers to avoid the impact of the solar rays? Will they be impregnated into other materials? Will they be dispensed in lead shielded containers? Will all of the enzyme products of the future be dispensed under an atmosphere of inert gas? When used, what are the problems of disposition? What about the

waste products? Will still more appear which are oxygen and light sensitive? How will they be handled? What are the problems of storage and transportation? Certain of these requirements are with us today. Pharmaceutical education cannot alone be involved in this problem, for everywhere that we have intersections of the avenues of the specializations of pharmacy, we shall need to share our knowledge, our ideas, and our services.

We could take a note from the medic's book and remember that today, medicine has a greater number of specialists than general practitioners. This specialization has improved overall medical service. Is it unrealistic then, to assume that pharmacy will do likewise? Educators are mindful of the duties and functions of the practitioners and the problems of distribution, but only if we have the advice of the experts from these other areas. There is no magic by which our committee plans to function, but there is a degree of appreciation of the NWDA's interest and desire for advice on pharmaceutical education.

President Gibbs, you and your secretarial colleagues have been most courteous to invite me to visit with you for these few minutes. Yours is an organization of individuals who are dedicated, designed, and qualified for their leadership and fearlessness. I know all too well of the frequency in which you stand alone and I do hope that your organization, too, will find it wise to cross fertilize or intersect with the other avenues of pharmacy. All of us recognize the ramifications and personalized interest of individual groups, but pharmacy's success will only be brought about when we develop a program of unified efforts. Our voices must be audible but the quality of our utterances must ring with authenticity.

CANCER RESEARCH GRANT

A research grant of $555 was obtained from the South Dakota Division of the American Cancer Society to help finance a program at State University directed at synthesizing new anti-cancer compounds. Director of the program is **Dr. Gary Omodt,** associate professor and head of pharmaceutical chemistry. Chief research assistant is **Dennis Hins,** Wessington, fifth-year pharmacy student. Also taking part in the project is **Loren Schweigert,** Gregory, fifth-year pharmacy student, who is registered in the College's undergraduate research program.

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PHARMACEUTICAL CHEMISTRY OCCUPIES NEW QUARTERS

The Department of Pharmaceutical Chemistry is now housed in Science Hall, the new addition to the chemistry building at South Dakota State University. The major portion of the department is located on the third floor including the general pharmaceutical chemistry undergraduate laboratory, the analytical instrument laboratory, the organic medicinal laboratory, the dental-pharmacy research laboratory, and three small research laboratories. The bionucleonics laboratories are located in the basement. An important addition to the University is the chemistry-pharmacy library which is located on the third floor. Occupancy was complete at the start of second semester.

112TH APHA ANNUAL MEETING

The 112th annual meeting of the American Pharmaceutical Association and affiliated and related organizations will be held in Detroit during the week of March 28 to April 2. The opening General Session will be held Sunday evening, March 28.

PHARMACY STUDENT PRESIDENT OF ALPHA PHI OMEGA

Lyle Leitholt, Aberdeen, fourth-year pharmacy student, has been elected president of Alpha Phi Omega, national recognition and service fraternity for men, at South Dakota State University.

RHO CHI INITIATES

Two new members were initiated into Rho Chi, national pharmacy honor society, at South Dakota State University recently. New members are **Bernard E. Hietbrink,** assistant professor of pharmacology, and **Robert Fullenkamp,** Burbank, fifth-year pharmacy student.

PROFESSOR AUTHORS PAPER

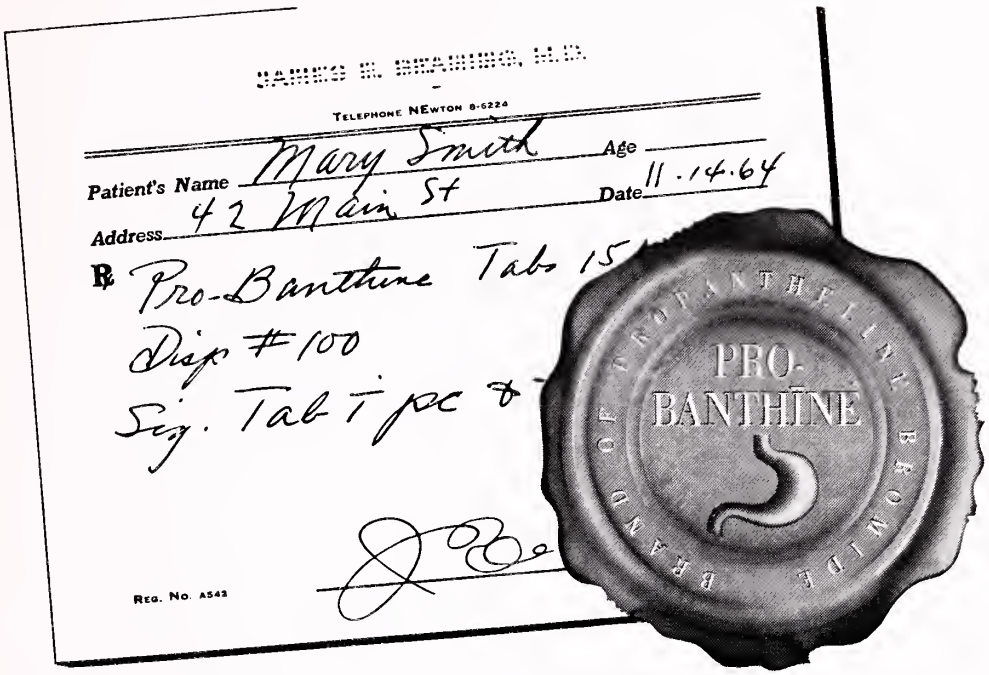
Gary Omodt, associate professor and head of pharmaceutical chemistry at South Dakota State University, is author of a research paper titled "Synthesis of Some Hexamine Derivatives as Potential Antispasmodics" which appeared in the December issue of the **Journal of Pharmaceutical Sciences.** The types of compounds discussed are those that will reduce intestinal spasm and decrease acid secretion in the stomach.

STUDENT DRUG TRIP

On January 30, approximately 60 undergraduate pharmacy students and their wives went on a trip to Eli Lilly Laboratories in Indianapolis, Indiana. The trip offers an opportunity for the students to become acquainted with the synthesis, product development, analysis, and distribution of the pharmaceuticals that they will some day dispense. The stay in Indianapolis is sponsored by Eli Lilly and Company. The chaperones for the trip were **Dr.** and **Mrs. Omodt** and **Dr. Hietbrink. George Gibson,** Lilly representative, also accompanied the students.

KAPPA PSI OFFICERS

Kappa Psi, national professional fraternity for men in pharmacy at South Dakota State University, has elected officers for the 1964-65 academic year. They are **James L. Nelson,** Forest City, Iowa, regent; **Melvin J. Henrichsen,** Brookings, vice regent; **Derald Shaw,** Faulkton, secretary; **Dwayne A. Plender,** Orange City, Iowa, treasurer; **Donald R. Spawn,** Brookings, historian; **Murray Doeden,** Worthington, Minnesota, chaplain. Grand council deputy is **Kenneth Redman,** professor and head of the Pharmacognosy Department.



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Dosage—The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six tablets daily in divided doses. In severe conditions as many as four tablets may be given four times daily. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg. and, for parenteral use, as serum-type ampuls of 30 mg.

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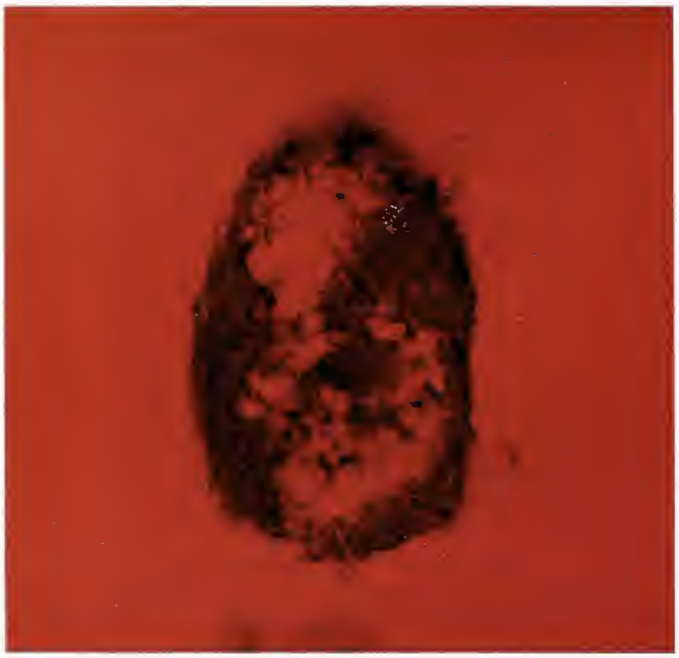
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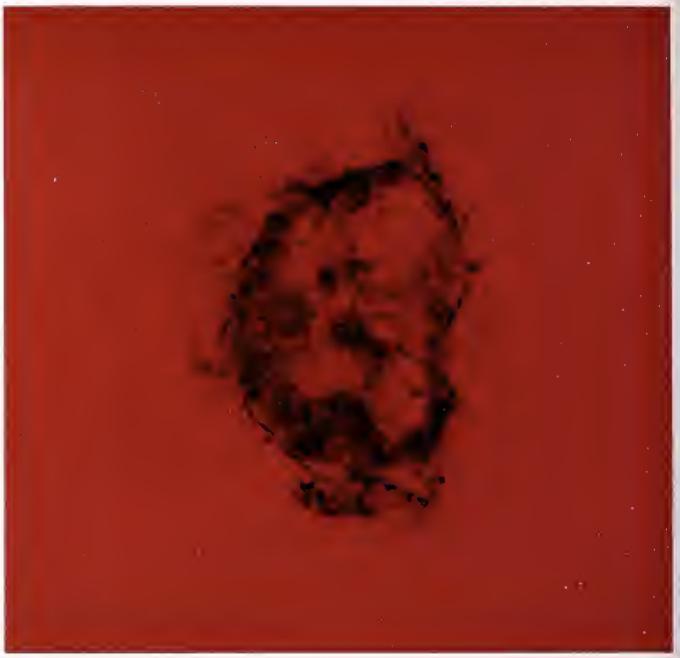
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Usual Adult Dosage: 250 mg. every six hours. *Usual Dosage for Children*—(under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours for moderately severe infections; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci or other penicillinase-producing organisms.

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Supplied: No. 606—Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

References: 1. Millard, F. J. C., and Batten, J. C.: Brit. M. J. *i*:1159 (April 28) 1962. 2. Ivler, D., *et al.:* Abstracts, Third Interscience Conference on Antimicrobial Agents and Chemotherapy, October 1963, p. 32. 3. Stewart, G. T: Pharmakotherapia *1*:197, 1963. (Progress in Drug Therapy). 4. Grant, I. W. B., *et al.:* Brit. M. J. *ii*:482 (Aug. 18) 1962. 5. Millard, F. J. C., and Batten, J. C.: Brit. M. J. *i*:644 (March 9) 1963. 6. Oswald, N. C.: Postgrad. Med. *35*:233 (March) 1964. 7. Howells, C. H. L., and Tyler, L. E.: Brit. J. Clin. Pract. *17*:321 (June) 1963. 8. May, J. R., and Delves, D. M.: Thorax *19*:298, 1964. 9. May, J. R., *et al.:* Lancet *ii*:444 (Aug. 29) 1964. 10. Pines, A.: Lancet *ii*:445 (Aug. 29) 1964.

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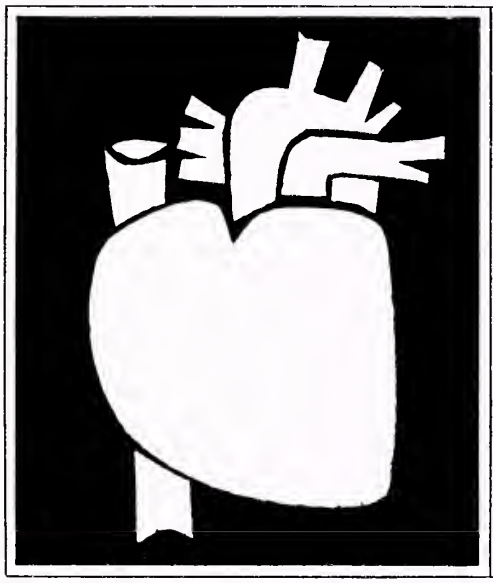
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*Lennox, W. G.: Epilepsy and Related Disorders, Boston, Little, Brown and Company, 1960, vol. 2, p. 865.

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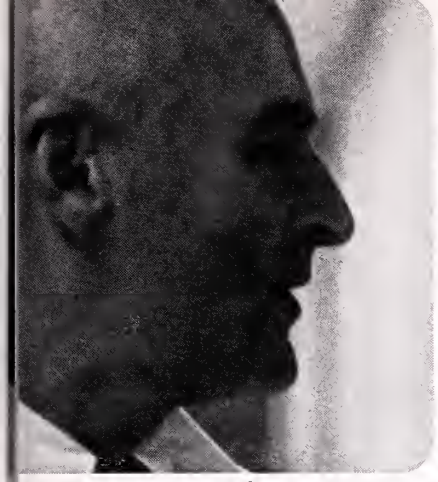
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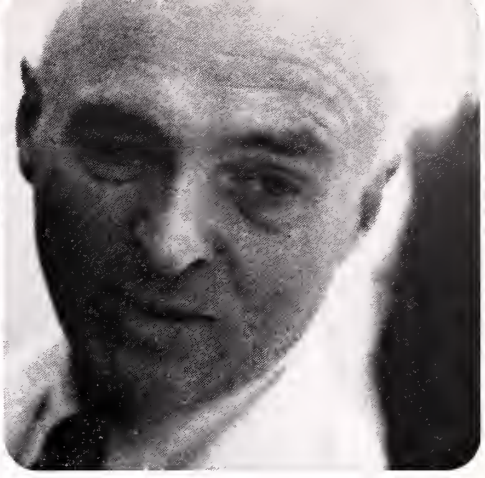
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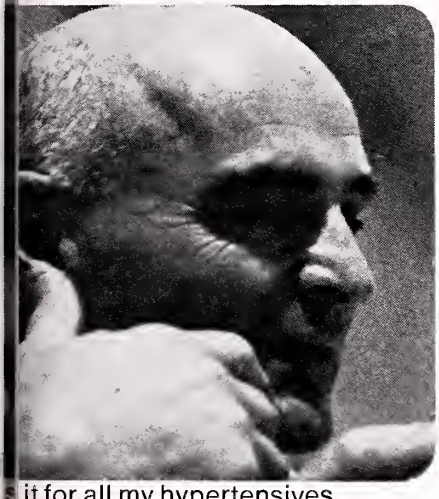
sir. She's down to 140/85.



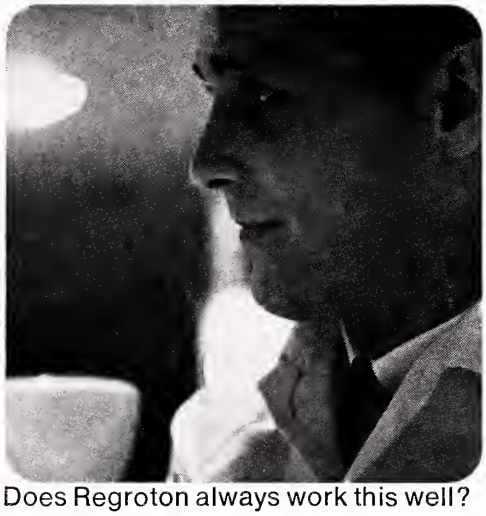
Right. When we started, she was 195/120.



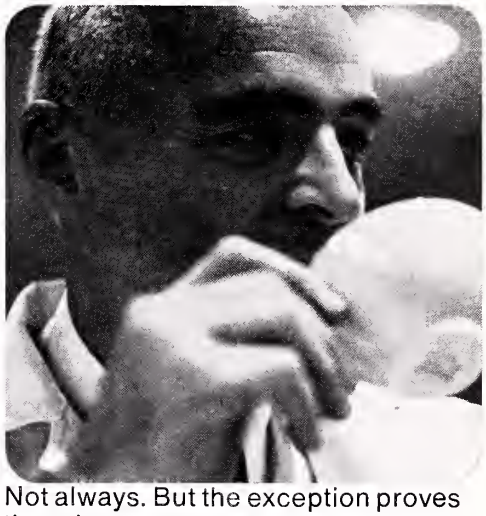
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SIGNEMYCIN®

Side Effects: Glossitis and allergic reactions, as well as severe anaphylactoid reactions, have been reported as rare side effects. Should significant reaction or idiosyncrasy occur, discontinue medication and institute countermeasures. Use of tetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of developing teeth. Reduce usual oral dosage and consider serum level determinations in patients with impaired renal function to prevent possible liver toxicity due to excessive accumulation of antibiotic in the serum.

Precautions: Overgrowth of nonsusceptible organisms may occur. In such cases, discontinue medication and institute appropriate specific therapy as indicated by susceptibility testing. Aluminum hydroxide gel given with antibiotics has been shown to decrease their absorption and is contraindicated. The coloring agents used in Signemycin Syrup and Pediatric Drops may produce red discoloration of stools.

Triacetyloleandomycin, a constituent of Signemycin, administered to adults in daily oral doses of 1.0 Gm. (3 Gm. Signemycin) for periods of more than ten days may produce hepatic dysfunction and jaundice. In the rare patient who requires this high dosage level of Signemycin initially, liver function should be carefully followed and dosage should be reduced, as promptly as possible, to the usual recommended range of 1.0 to 2.0 Gm. per day. Therefore, Signemycin is recommended primarily for the treatment of acute or severe infections, with treatment restricted to a ten-day period. If clinical judgment dictates continuation of therapy beyond ten days, serial monitoring of the liver profile should be carried out, including BSP, transaminase, and cephalin flocculation tests. Changes observed in liver function were reversible following discontinuation of the drug.

Formulas: Capsules: 250 mg. Signemycin (167 mg. tetracycline HCl and 83 mg. oleandomycin as triacetyloleandomycin).

Capsules: 125 mg. Signemycin (83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin).

Syrup: 125 mg. Signemycin (tetracycline equivalent to 83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin) per 5 cc.

Pediatric Drops: 100 mg. Signemycin (tetracycline equivalent to 67 mg. tetracycline HCl and 33 mg. oleandomycin as triacetyloleandomycin) per cc.

More detailed professional information available on request.

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Of 5,057 patients with confirmed infections of all body systems... 4,731 or 93.5% were treated successfully with Signemycin®

Note:

The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87] In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	No. Responded To Signemycin
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

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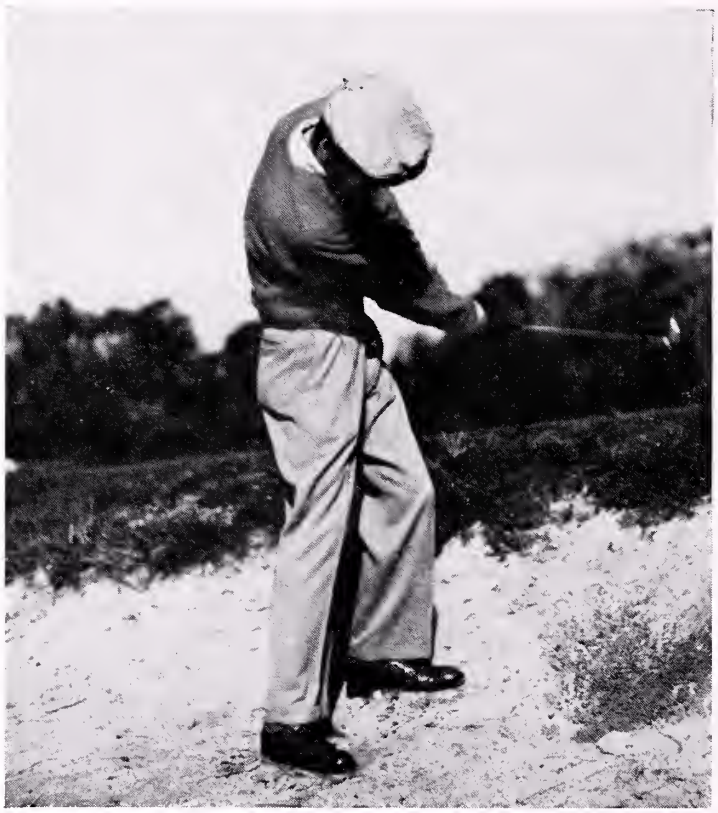
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'Soma' Compound helps relieve pain and relax muscle in many musculoskeletal disorders. Patient comfort can be increased and recovery time shortened.

Soma® Compound

carisoprodol 200 mg., phenacetin 160 mg., caffeine 32 mg.

rational combination therapy for most patients with strains and sprains: relaxes muscle, relieves pain

Also available as 'Soma' Compound with Codeine: carisoprodol 200 mg., phenacetin 160 mg., caffeine 32 mg., codeine phosphate 16 mg. (Warning: may be habit-forming.)

(Warning: Codeine may be habit-forming.) **Indications:** 'Soma' Compound and 'Soma' Compound with Codeine are useful for relief of pain and stiffness in traumatic, rheumatic and other conditions affecting muscles and joints. **Contraindications:** Allergic or idiosyncratic reactions to carisoprodol, phenacetin, or codeine phosphate. **Precautions:** *Phenacetin*—With long-term use, give cautiously to patients with anemia and cardiac, pulmonary, renal or hepatic disease. May damage the kidneys when used in large amounts or for long periods. *Caffeine*—Not recommended for persons extremely sensitive to its CNS stimulating action. *Codeine phosphate*—Use with caution in addiction-prone individuals. *Carisoprodol*—Carisoprodol, like other central nervous system depressants, should be used with caution in patients with known propensity for taking excessive quantities of drugs and in patients with known sensitivity to compounds of similar chemical structure, e.g. meprobamate. **Side effects:** Drowsiness, lightheadedness, dizziness, and gastric complaints have been reported infrequently for either or both of these preparations. *Phenacetin*—Side effects are extremely rare with short-term use of recommended doses. Prolonged ingestion of overdoses may produce dyspnea, cyanosis, hemolytic anemia, skin rash, anorexia, subnormal temperature, insomnia, headache, mental disturbances, and tolerance. *Caffeine*—Side effects are almost always the result of overdosage. Average doses may rarely cause nausea, nervousness, insomnia, and diuresis. Excessive dosage may produce, in addition, restlessness, nervousness, tolerance, tinnitus, tremors, scintillating scotomata, tachycardia, and cardiac arrhythmias. *Codeine phosphate*—Possible side effects are nausea, vomiting, constipation, and miosis. *Carisoprodol*—The only side effect reported with any frequency is sleepiness, usually on higher than recommended doses. An occasional patient may not tolerate carisoprodol because of an individual reaction, such as a sensation of weakness. Other rarely observed reactions have included dizziness, ataxia, tremor, agitation, irritability, headache, increase in eosinophil count, flushing of face, and gastrointestinal symptoms. One instance each of pancytopenia and leukopenia, occurring when carisoprodol was administered with other drugs, has been reported, as has an instance of fixed drug eruption with carisoprodol and subsequent cross-reaction to meprobamate. Rare allergic reactions, usually mild, have included one case each of anaphylactoid reaction with mild shock and angioneurotic edema with respiratory difficulty, both reversed with appropriate therapy. In cases of allergic or hypersensitivity reaction, carisoprodol should be discontinued and appropriate therapy initiated. Suicidal attempts may produce coma and/or mild shock and respiratory depression. **Dosage:** Usual adult dosage of 'Soma' Compound or 'Soma' Compound with Codeine is one or two tablets three times daily and at bedtime. **Supplied:** 'Soma' Compound, orange tablets, each containing carisoprodol 200 mg., phenacetin 160 mg., and caffeine 32 mg. 'Soma' Compound with Codeine, white capsule-shaped tablets, each containing carisoprodol 200 mg., phenacetin 160 mg., caffeine 32 mg., and codeine phosphate 16 mg. Narcotic order form required. *Before prescribing, consult package circular.*

CSO-5114

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in sinusitis, colds, U.R.I.

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1. Clinical report on file, Medical Department, A. H. Robins Co., Inc.
2. Schiller, I. W. and Lowell, F. C.: New England J. Med. 261:478, 1959.

BRIEF SUMMARY: Indications: Dimetapp reduces nasal secretions, congestion, and postnasal drip for symptomatic relief of colds, U.R.I., sinusitis, and rhinitis. **Contraindications:** Antihistamine sensitivity. Not recommended for use during pregnancy. **Precautions:** Administer with caution in the presence of cardiac or peripheral vascular diseases and hypertension. Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. **Side Effects:** Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.

See product literature for complete prescribing information.

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glycopyrrolate 2 mg. / phenobarbital 16.2 mg. / (warning: may be habit forming)

The remarkable efficacy of Robinul (glycopyrrolate) in the treatment of peptic ulcer cannot be attributed to any single characteristic of the drug. Rather it is the sum total of several subtle pharmacologic advantages that enables this anticholinergic to make such a significant contribution to the total ulcer regimen.

Epstein[1] found glycopyrrolate's intensive antisecretory action to be exemplary. Breidenbach[2] was impressed by its pronounced antispasmodic effects. And Young and Sun[3] reported that a 2 mg. oral dose "did not affect gastric emptying or intestinal transit time. . . ." According to Slanger[4], the absence of annoying side effects is an important plus factor ". . . for it permits ready individualization of dosage for control of mild to severe symptoms." Posey[5] sums it up when he says, "In effect, with glycopyrrolate, one approaches an ideal agent for the management of peptic ulcer. With it a vagolytic effect may be obtained without interfering with gastric emptying—the medical equivalent to vagectomy plus an adequate drainage procedure."

We invite you to try Robinul (glycopyrrolate) in your practice. Discover firsthand how several subtle advantages add up to make it the superior anticholinergic agent.

BRIEF SUMMARY

INDICATIONS: In addition to its primary indications for duodenal and gastric ulcer, glycopyrrolate is indicated for other G-I conditions which may benefit from anticholinergic therapy. Robinul-PH Forte (glycopyrrolate 2 mg. with phenobarbital) is indicated when these situations are complicated by mild anxiety and tension.

CONTRAINDICATIONS: Glaucoma, urinary bladder neck obstruction, pyloric obstruction, stenosis with significant gastric retention, prostatic hypertrophy, duodenal obstruction, cardiospasm (megaesophagus), and achalasia of the esophagus, and in the case of Robinul-PH Forte, sensitivity to phenobarbital.

PRECAUTIONS: Administer with caution in the presence of incipient glaucoma.

SIDE EFFECTS: Dryness of the mouth, blurred vision, urinary difficulties, and constipation are rarely troublesome and may generally be controlled by reduction of dosage. Other side effects associated with the use of anticholinergic drugs include tachycardia, palpitation, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, drowsiness, and rash.

DOSAGE: Should be adjusted according to individual patient response. Average and maximum recommended dose is 1 tablet three times a day: in the a.m., early p.m., and at bedtime. *See product literature for full prescribing information.*

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phenobarbital 16.2 mg.
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REFERENCES: 1. Epstein, J. H.: Am. J. of Gastroent., 37:295, March, 1962. 2. Breidenbach, W. C.: Investigative Clinical Report, March, 1961. 3. Young, R., and Sun, D. C. H.: Ann. N. Y. Acad. Sc., 99:174, Feb., 1962. 4 Slanger, A.: Journal of New Drugs, 2:215, July-Aug., 1962. 5. Posey, E. L., Jr.: Am. J. Dig. Dis., 7:863, Oct., 1962.

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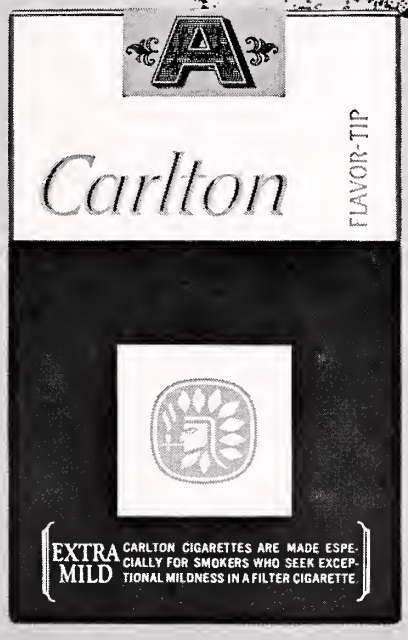
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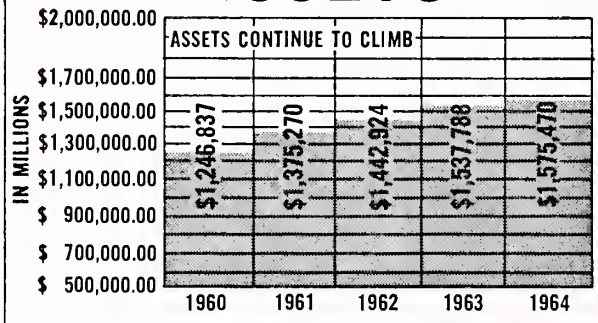
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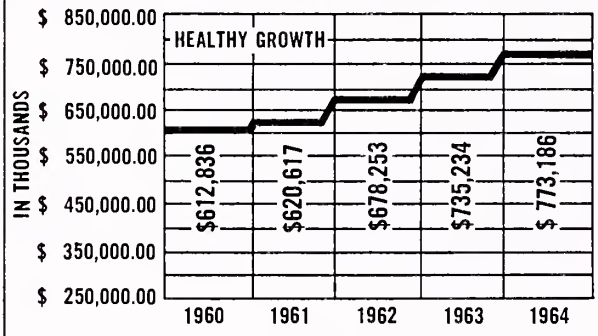
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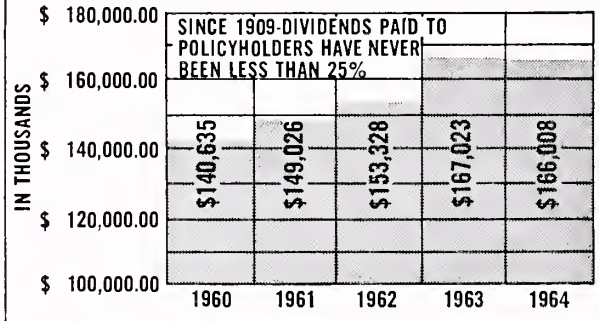
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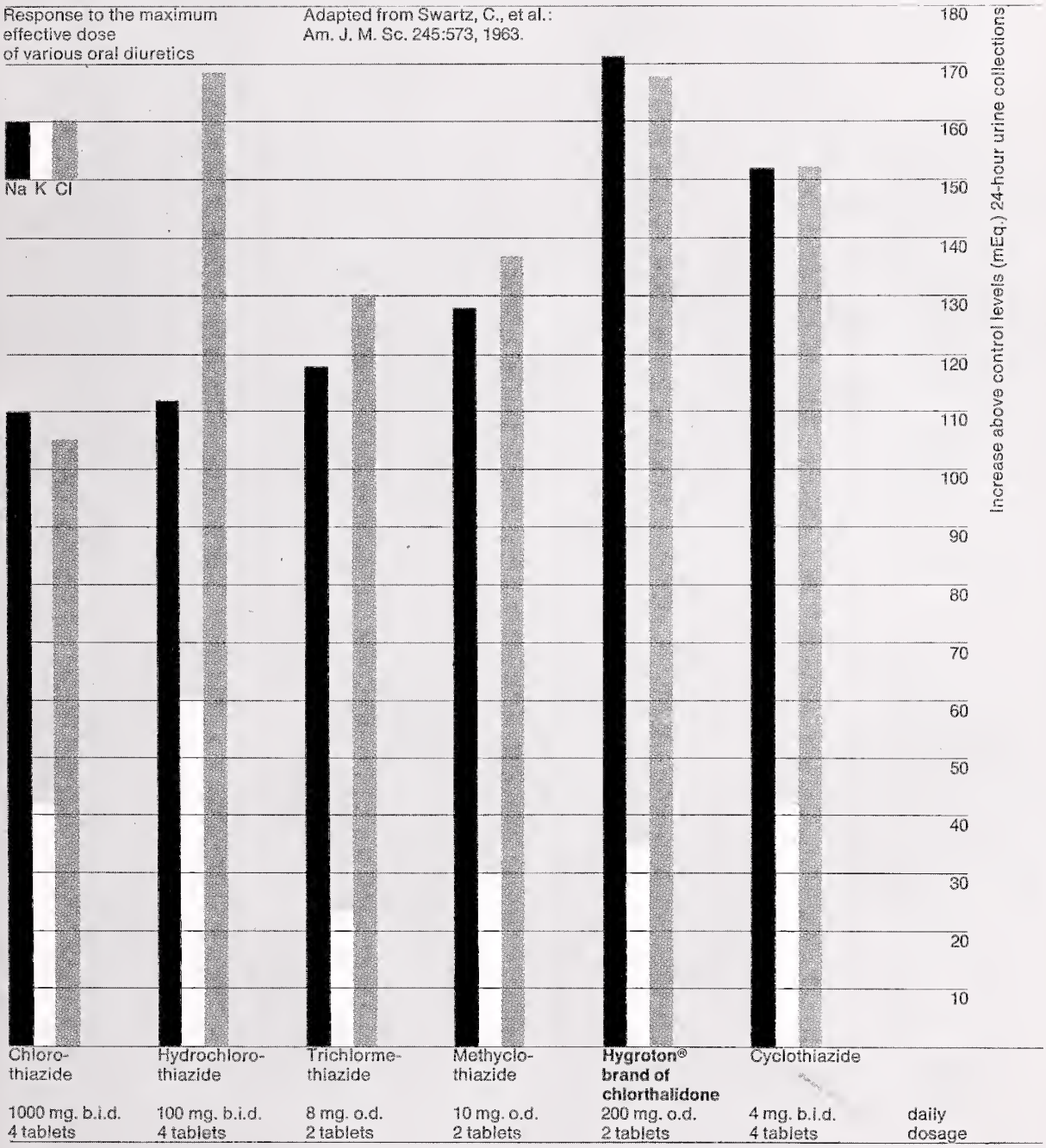
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Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
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Availability: Tablets of 100 mg. in bottles of 100 and 1000.
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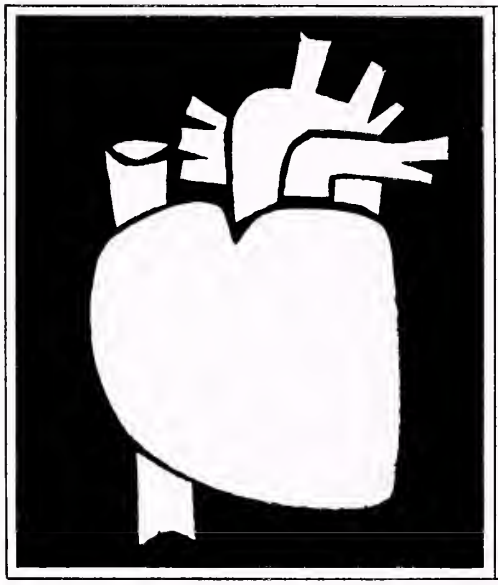
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Indications: 'Miltrate' is useful for prophylaxis of pain in angina pectoris, especially where accompanied or intensified by anxiety. **Contraindications:** Like all nitrates, pentaerythritol tetranitrate should be avoided or prescribed cautiously for patients with glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use. **Precautions:** *Meprobamate* — Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies. **Side effects:** Side effects of 'Miltrate' administration have been few, consisting of headache, nausea, sleepiness and insomnia, and dizziness. *Pentaerythritol tetranitrate*—The most common side effects are transient headache, nausea, and rash. Weakness, palpitation, flushing, gastrointestinal distress, and lightheadedness have been reported on a few occasions. *Meprobamate*—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse. **Dosage:** Usual dosage is one or two tablets before meals and at bedtime. Individualization of dosage is required for maximum therapeutic effect. Doses above 12 tablets daily are not recommended. (Note: When titration of the doses of the individual components of 'Miltrate' is desired, meprobamate is available as 'Miltown' [meprobamate] tablets and 'Meprospan' [meprobamate, sustained release] capsules.) **Supplied:** White tablets, each containing meprobamate 200 mg. and pentaerythritol tetranitrate 10 mg. *Before prescribing, consult package circular.*

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1. Griffith, R.S., and Black, H.R.: Current Ther. Res., *6*: 253, 1964.

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Prairie Rattlesnake Bites In South Dakota

by

Henry M. Parrish, M.D., Dr.P.H.

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This investigation was supported in part by Public Health Service Research Grant GM 11268-02 from the Division of General Medical Sciences, Public Health Service.

South Dakota has the third highest annual incidence of poisonous snakebites of the states in the West North Central Region of the United States. The snakebite rates per 100,000 population per year for this region are: Missouri (5.42), Kansas (5.28), South Dakota (4.56), Nebraska (3.26), North Dakota (0.79), Iowa (0.33), and Minnesota (0.09). In view of these findings it is surprising that there were no snakebite deaths in South Dakota during the ten year period, 1950 through 1959.[1] Very little has been published about poisonous snakebites in South Dakota. Therefore, a statewide survey of snakebites was conducted for the following purposes: (1) to define the geographical distribution of snakebites in South Dakota; (2) to determine the who, where, when and why factors associated with snakebite accidents; and (3) to review briefly current concepts of snakebite treatment.

POISONOUS SNAKES

According to Klauber,[2] the only poisonous snake indigenous to South Dakota is the prairie rattlesnake **(Crotalus viridis viridis).** It is found in the western, central and extreme southeastern parts of South Dakota. Adult prairie rattlesnakes average about three to four feet in length. Occasionally a larger specimen is found. Conant[3] states that this snake, "lives in the grasslands of the Great Plains, but retreats in winter to dens in rocky outcrops and ledges." See Figure 1 for a photograph of a prairie rattlesnake. Rattlesnakes are pit vipers. They are so named because of a characteristic pit which is located between the eye and nostril on each side of the body. Pit vipers also are identified by elliptical pupils and by two well-



Figure 1. Prairie Rattlesnake, Only Indigenous Poisonous Snake in South Dakota. (Courtesy of Klauber, L. M.) Ref. No. 2.

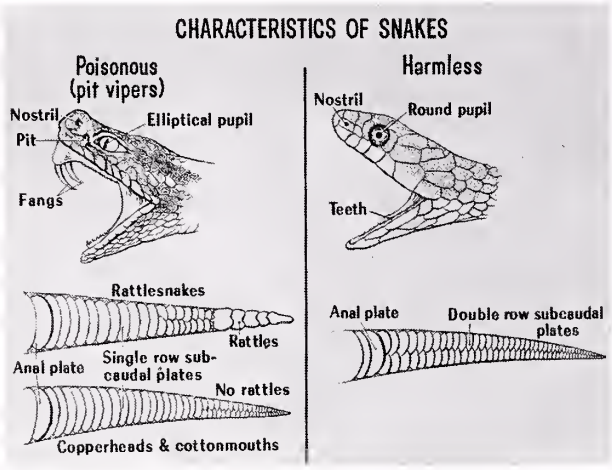


Figure 2. Characteristic Features of Poisonous (Pit Vipers) and Harmless Snakes.

developed fangs which protrude from the maxillae when the snake's mouth is opened. Rattlesnakes have rattles which are attached to their tails. Harmless snakes do not have facial pits, they have round rather than elliptical pupils, and while they have teeth, they lack fangs.

Oftentimes people will chop off the head of a snake which has bitten someone and bring the snake's body in for identification. Pit vipers can be identified by turning the snake's belly upwards and noting a single row of subcaudal plates just below the anal plate. Harmless snakes have a double row of subcaudal plates. Figure 2 depicts the characteristic features of pit vipers and harmless snakes.

METHODS OF STUDY

A questionnaire and letter explaining the purpose of this study were mailed to a "selected" group of South Dakota hospitals listed in Hospitals (Journal of the American Hospital Association) Guide Issue. The hospitals selected for this study were general hospitals, children's hospitals and college infirmaries. Army, Navy, Coast Guard, Public Health Service, Air Force and Veterans Administration hospitals also were sent questionnaires. Maternity, tuberculosis and mental hospitals were omitted as they would not be expected to treat snakebite victims. A total of 58 South Dakota hospitals comprise the study group. Each hospital was requested to report all in-patients admitted to the hospital for snakebite treatment during 1958 and 1959.

Most hospitals do not code and tabulate the diagnoses of emergency room and out-patient clinic visits. Since some snakebite victims are not admitted to the hospital as in-patients, it seemed essential to ask a sample of practicing physicians how many snakebite victims they treated on both an out-patient (office, home, emergency room, etc.) and on an in-patient basis. Previous surveys,[4, 5] have shown that most people with venomous snakebites are treated by general practitioners, surgeons, internists, pediatricians, and orthopedic surgeons. Therefore, a random sample of one-third of all the South Dakota physicians in these categories of practice who were listed in the A.M.A. American Medical Directory were sent questionnaires.

Death certificates for fatal snakebite cases were obtained from the South Dakota State Department of Health.

RESULTS

This report is based on questionnaires returned by 57 (98 per cent) of 58 South Dakota hospitals. It is supplemented by questionnaires returned by 92 (82 per cent) of 112 practicing physicians in the State. The South Dakota State Department of Health indicated that there were no snakebite deaths during 1958 and 1959.

INCIDENCE — South Dakota hospitals reported a total of 26 in-patients treated for poisonous snakebites during 1958 and 1959. There were 9 cases in 1958 and 17 cases in 1959 — an average of 13 cases per year. Of the 26 snakebites reported during 1958 and 1959, detailed case reports were received for 18 patients and only numbers of bites were reported for 8

cases. **All of the analyses in this paper, excluding the estimate of incidence, were based on the 18 detailed case reports received from hospitals.**

Physicians' reports, when adjusted to account for all South Dakota physicians in the practice categories mentioned, indicated that approximately 22 in-patients and 9 out-patients were treated for snakebite accidents each year. The difference between the estimate of 22 in-patients treated by physicians and the average of 13 in-patients reported by hospitals can be explained, in part, by the following facts: (1) one South Dakota hospital did not participate in the study; (2) four counties from which physicians reported snakebites did not have hospitals listed in the Hospitals Guide Issue; (3) there was evidence of under reporting snakebite in-patients from four hospitals which participated in the study; and (4) physicians indicated that some in-patients were treated in small clinics and hospitals not listed in the Hospitals Guide Issue. Taking all of these various reports into consideration, I estimate that approximately 31 (22 in-patients and 9 out-patients) people are treated annually for poisonous snakebites in South Dakota. This provides an incidence of 4.56 bites per 100,000 population per year.

GEOPATHOLOGY — The geographical distribution of snakebites reported in South Dakota during 1958 and 1959 may be seen in Figure 3. The lightly shaded counties are those from which hospitals reported in-patients treated for snakebites. An appropriate symbol is used to mark each hospitalized patient who was bitten by a specific kind of snake. The darker shaded counties are those counties from which physicians reported snakebite cases, but from which no cases were reported by hospitals.

Of 18 people hospitalized for snakebite treatment for whom detailed records were available, 17 were bitten by prairie rattlesnakes and one was bitten by an unidentified poisonous snake. The unidentified snake most likely was a prairie rattler.

Figure 3 shows that hospitalized snakebite patients were reported from the central and western two-thirds of the State. Counties bordering the Missouri River reported numerous rattlesnake bites. The geographical pattern of bites by prairie rattlesnakes in South Dakota is consistent with the ecological range of this snake described by Klauber.[2]

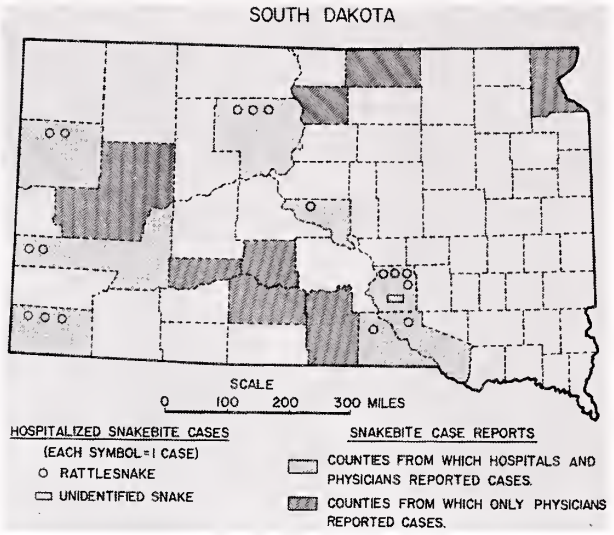


Figure 3. Geographical Distribution of Poisonous Snakebites in South Dakota, 1958 and 1959.

TABLE 1

SEASONAL DISTRIBUTION OF RATTLESNAKE BITES IN SOUTH DAKOTA, 1958 AND 1959

Month	No. Bites	Month	No. Bites
January	0	July	6
February	0	August	5
March	0	September	1
April	0	October	0
May	2	November	0
June	4	December	0

TEMPORAL RELATIONSHIPS — The monthly distribution of snakebite accidents is shown in Table 1. Snakebites were infrequent during the colder months of the year — October through April. In general, snakes are usually inactive and/or hibernating during the colder months. All of the snakebites in South Dakota happened from May through September. This striking seasonal distribution of bites coincides with the time that snakes are most abundant and active and with the time that people have greater exposure due to out-of-doors occupations and recreation. Similar "seasonal epidemics" of venomous snakebites have been observed in New England and North Carolina.[4, 5]

The time of day when most snakebite accidents happened was the six hour period from 3:00 - 8:59 P.M. when 10 (56 per cent) people were bitten. The number of bites by three hour periods of time were: 6:00 - 8:59 A.M., 2 bites; 9:00 - 11:59 A.M., 1 bite; 12:00 noon - 2:59 P.M., 4 bites; 3:00 - 5:59 P.M., 5 bites; 6:00 - 8:59 P.M., 5 bites. There were no bites reported from 9:00

TABLE 2

AGE DISTRIBUTION OF HOSPITALIZED SNAKEBITE VICTIMS IN SOUTH DAKOTA, 1958 AND 1959

Age Group (years)	Population at Risk*	No. Bites	Rate per 100,000**
0 - 9	161,038	5	3.10
10 - 19	119,509	10	8.37
20 - 29	76,988	0	0.00
30 - 39	81,420	3	3.68
40 - 49	76,297	0	0.00
50 - 59	64,921	0	0.00
60 - 69	54,919	0	0.00
70 or more	45,422	0	0.00

*Based on the 1960 Census of the Population of South Dakota.

**These rates are only on hospitalized patients for whom information was available.

P.M. - 5:59 A.M. The time of the bite accident was not stated for one patient.

BITE VICTIMS — There were 7 white males, 4 white females, 5 non-white males and 2 non-white females admitted to South Dakota hospitals for snakebite treatment during 1958 and 1959. All of the non-whites were American Indians. Using the 1960 census for the population of South Dakota the bite rates per 100,000 population were: 2.12 for white males, 36.14 for non-white males, 1.24 for white females and 14.73 for non-white females. Thus, males had higher snakebite rates than females and non-whites had higher rates than whites.

The age distribution of South Dakota bite victims is shown in Table 2. The largest number of bites happened to children and youths 10 - 19 years of age (10 bites) and those 0 - 9 years of age (5 bites). Indeed 83 per cent of all snakebites were inflicted on children and young adults less than 20 years of age. Age-specific bite rates are much more meaningful since they take into account the population at risk in a particular age group. The highest biannual bite rate per 100,000 population was: 10 - 19 years of age (8.37). The lowest bite rates were found among people 40 or more years of age.

An analysis of the occupations of the patients showed that 14 were children, three were farmers or farm laborers, and the occupation of one man was not stated.

ACTIVITY AND PLACE — Three bites occurred while children were playing, one in his own yard and two elsewhere. Two people were bitten while handling a poisonous snake and two were bitten while hunting. One each suffered a bite while swimming, while working on a farm, while reaching under a porch at home and while walking on or near a highway. The activity was not stated for the remaining patients.

The place where the bite accident happened is closely related to the activity when bitten. The largest number of bites, three, happened near a lake, river or other body of water. Two people were bitten in their own yards. One each was bitten under a building, in a field adjacent to the house, in a field away from the house, on a farm not near the house, and on or near a highway. The place where the bite took place was not coded for the other patients.

TABLE 3

ANATOMICAL SITES OF BITES INFLICTED BY RATTLESNAKES IN SOUTH DAKOTA, 1958 AND 1959

Anatomical Site of Bite	Side of Body		Total No. of Bites
	Right	Left	
Head, face & neck	0	0	0
Trunk, front	0	1	1
Trunk, back	0	0	0
Upper arm	0	1	1
Forearm	0	0	0
Hand	0	1	1
Fingers	2	0	2
Upper leg	0	1	1
Lower leg & ankle	4	6	10
Foot	1	1	2
Toes	0	0	0

SITE AND SEVERITY — The anatomical sites on human beings where venomous snakes inflicted their bites are shown in Table 3. Ninety-four per cent of the bites were inflicted on the extremities — 22 per cent on the upper extremities and 72 per cent on the lower extremities. The fingers were the parts most often bitten on the upper extremities. The lower legs, including the ankles, were the parts most frequently bitten on the lower extremities. One man was bitten on his left nipple.

A modification of the clinical classification of pit viper venenation by Wood, Hoback and Green[6] was used to determine the severity of bites. Bites were classified as follows:

Grade 0 — **No venenation.** Fang or tooth marks, minimal pain, less than 1 inch of

surrounding edema and erythema. No systemic involvement.

Grade I — **Minimal venenation.** Fang or tooth marks, severe pain, 1 - 5 inches of surrounding edema and erythema in first 12 hours after bite. No systemic involvement usually present.

Grade II — **Moderate venenation.** Fang or tooth marks, severe pain, 6 - 12 inches of surrounding edema and erythema in first 12 hours after bite, systemic involvement may be present — nausea, vomiting, giddiness, shock or neurotoxic symptoms.

Grade III — **Severe venenation.** Fang or tooth marks, severe pain, more than 12 inches of surrounding edema and erythema in first 12 hours after bite, systemic involvement usually present as in Grade II.

The severity of venenation (venom poisoning) was classified as follows for 17 hospitalized cases: 3 (17 per cent) were Grade 0; 11 (65 per cent) were Grade I; 2 (12 per cent) were Grade II; and 1 (6 per cent) was Grade III. For one hospitalized case the severity of venenation was not stated. There were no deaths among the 18 hospitalized cases in this series. Furthermore, there were no deaths during 1958 and 1959 among the estimated 31 snakebite cases that occurred annually. The case-fatality rate for poisonous snakebites in South Dakota is estimated to be less than one-half of one per cent. This is confirmed by the fact that there were no snakebite deaths in South Dakota from 1950 through 1959.[1]

TREATMENT

The current treatment of North American pit viper (rattlesnake, cottonmouth moccasin and copperhead) bites includes both minor surgery and medical forms of treatment. A constricting band (tourniquet) should be applied lightly to the involved extremity several inches proximal to the bite. The constricting band should be applied only tight enough to occlude the superficial venous and lymphatic flow. **It should not occlude the arterial circulation** and it should be released every 10 - 15 minutes for a minute or two. As edema resulting from venom poisoning spreads, the constricting band should be advanced to keep just ahead of the swelling. The purpose of the constricting band is to impede the spread of venom until incision and suction can be used to remove the venom mechanically and/or until antivenin can be administered to neutralize the venom.

Incision and suction (I.S.) is effective in removing venom from experimental animals up to about 120 minutes after the venom is injected. The sooner it is used, the larger the amount of venom that can be removed. Suction should be used for about one hour. We have found the suction cups supplied in the Cutter and the Becton-Dickinson snakebite first-aid kits effective for removing pit viper venom. Incisions, one-quarter inch long and one-eighth to one-quarter inch deep, are made into the subcutaneous tissues over the fang punctures. A few (3 - 5) additional incisions may be made in the surrounding edematous tissues. A large number of incisions is not needed. Immobilization aids in limiting the spread of venom. However, if one must decide between immobilization or seeking prompt medical treatment, the latter should be sought.

The "3 A's" (antivenin, antibiotics, and tetanus antitoxin and/or toxoid) are recommended, in addition to I.S., in treating all serious pit viper bites. Antivenin Crotalidae Polyvalent (Wyeth) is effective in neutralizing the venoms of all North American pit vipers. It is not protective against coral snake venom. Since antivenin is manufactured from horse serum, the patient should receive a skin test before antivenin is given. For Grade I venenations antivenin may be administered in the deltoid or gluteus muscles. In Grade II and Grade III venenations, antivenin diluted in 1000cc. of normal saline may be given intravenously.[7] Studies with radioisotopes have shown that antivenin accumulates at the site of the bite more rapidly after intravenous administration than after intramuscular administration.[8] Injection of antivenin into the local bite area is not a particularly effective way to administer antivenin. We have found the following amounts of antivenin useful in treating the various Grades of venenation: Grade 0 (no venenation) requires no antivenin; Grade I (minimal venenation) may require 10cc. (one ampoule) of antivenin; Grade II (moderate venenation) requires 30 - 40cc. of antivenin; and Grade III (severe venenation) requires 50cc. or more of antivenin.

Since snakes' mouths and venoms may harbor pathogenic organisms, antibiotics and tetanus antitoxin and/or toxoid should be given prophylactically. Gram negative organisms predominate, hence a broad spectrum antibiotic is indicated. Penicillin used by itself is not adequate treatment.

Cortisone and ACTH do not affect the survival rate of animals poisoned with pit viper

venom. They probably should not be used during the first few days after venenation, although they may be beneficial later in treating serum sickness resulting from antivenin therapy. Antihistamines are contraindicated as they shorten the survival time of animals poisoned with pit viper venoms. Shock resulting from venom poisoning should be treated with infusions of blood, plasma, saline solution and vasopressor drugs. Meperidine hydrochloride and other analgesics may be given to relieve pain. Recently there have been reports of excessive tissue necrosis and amputations associated with cold therapy such as packing an extremity in ice or using ethyl chloride.[8] In my opinion, cold therapy should not be used in treating pit viper bites.

SUMMARY

An estimated 31 (22 in-patients and 9 out-patients) people in South Dakota were bitten by snakes annually — an incidence of 4.56 bites per 100,000 people. However, the estimated case-fatality rate was less than one-half of one per cent.

Of 18 in-patients reported in detail by South Dakota hospitals during 1958 and 1959, 17 were bitten by prairie rattlesnakes, and one by an unidentified poisonous snake. "Seasonal epidemics" of snakebites occurred with all of the bites inflicted from May through September.

Males had higher bite rates than females and non-whites had higher rates than whites. Eighty-three per cent of the cases were among children and young adults less than 20 years of age. Ninety-four per cent of the bites were on the extremities — 22 per cent on the upper extremities and 72 per cent on the lower extremities. Current snakebite treatment is discussed.

ACKNOWLEDGMENT: The author cites with gratitude the technical assistance of the following persons: Judi Pummill, Genevieve Calescibetta, and Linda Hinson.

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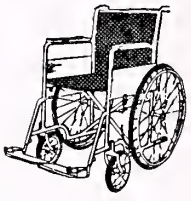
AMERICAN BOARD OF OB-GYN

The Part II examination will be conducted by the American Board of Obstetrics and Gynecology at The Edgewater Beach Hotel, Chicago, Illinois April 26-May 1, 1965. Candidates scheduled for examination are urged to make their hotel reservations at an early date.

Applications for the Part II examination to be given in April of 1966 will be accepted in the office of the Secretary during April or May, 1965 and must be accompanied by duplicate lists of patients dismissed from their service during the twelve months immediately preceding date of application.

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Percutaneous Needle Biopsies of the Liver and Kidney Clinical Indications and Clinico-Pathologic Correlation

by

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Needle biopsies have become well established procedures for obtaining histological diagnosis of pathological processes in the liver and kidney. Although physiological and biochemical examination have contributed much to clinical diagnosis, histologic examination of tissue is still the only method to prove the diagnosis in the living patient. Within the past fifteen years improvements in technique, the introduction of smaller aspiration needles,[23] and the increase in trained operators have made percutaneous needle biopsy a relatively safe procedure. However, this does not mean that needle biopsy is without risk.[12] It must always be regarded as potentially fatal and every care must be taken to avoid serious complications and possible mortality.[14, 34] Needle biopsy should never replace complete and careful clinical evaluation, but rather should be considered as an integral part of the total clinical examination. The procedure should be performed in those clinical situations where diagnosis is uncertain, where tissue diagnosis will dictate therapy, or for determining the effectiveness of therapy.[14, 32]

The purpose of this paper is to review the contraindications and indications for percutaneous needle biopsy of the liver and kidney and to discuss the limitations of histologic diagnosis. The interpretation of needle biopsies requires maximum cooperation between clinician and pathologist. Although some histologic features allow unequivocal diagnosis, other changes are not diagnostic and may be present in a variety of different diseases. In most cases the pathologist must know the clinical and laboratory findings to be able to accurately interpret the histological changes. The best results are ob-

tained when the clinician comes to the tissue laboratory, examines the slides, and discusses the case with the pathologist.

Needle Biopsy of the Liver

Before biopsy is attempted certain precautions must be observed. Percutaneous needle biopsy should only be performed in the hospital. A complete history and physical examination must be done, in particular inquiring into any history of uncontrolled bleeding, bruising, or hematologic disorders. The minimum laboratory preparation prior to biopsy requires a prothrombin time within four seconds of the control and cross matching of one unit of blood. Prolongation of the prothrombin time requires a complete study of the clotting mechanism. Any abnormality which cannot be corrected contraindicates biopsy. If only the prothrombin time is abnormal, or if the patient is deeply jaundiced Vitamin K_1, (10 mgm. by injection) should be administered three days prior to biopsy.[34] If this brings the prothrombin time to within four seconds of the control the biopsy may be done. Ascitic fluid should be tapped prior to biopsy as fluid will cause the liver to float away from the needle. Great care should be exercised to avoid the hilum and gallbladder in biopsying a patient with right diaphragm elevation or a small liver.[22] A chest x-ray prior to biopsy to determine the position of the liver is of great value. Post biopsy care is directed toward detecting bleeding and peritonitis. Vital signs should be taken every hour after biopsy for 10-12 hours and then every six hours for 1-2 days. Serious bleeding can occur 3-5 days after biopsy and the patient must have no strenuous activity for 10 days following needle biopsy.

RISKS AND COMPLICATIONS

When carefully done by experienced operators needle biopsy carries a very low mortality. In a review of 20,000 needle biopsies Zamscheck et al. found a mortality of 0.19%.[41] Menghini in Italy has reported a personal experience of 2,000 liver needle biopsies without mortality.[23] Serious complications occur in approximately 0.3% of patients biopsied.[24] The possibility of fatal complications must be considered each time a needle biopsy is planned. The use of strict criteria in selecting patients, and meticulous pre- and post-biopsy care reduces complications to a minimum.[12]

The major complications of liver needle biopsy are uncontrolled hemorrhage and perforation of a bile duct or the gallbladder.[22, 32, 34] Minor bleeding from the puncture wound occurs after almost all biopsies and consists of a thin trickle of blood lasting 1-2 minutes. When serious hemorrhage occurs it is usually secondary to perforation of distended hepatic or portal veins or tearing of the liver capsule.[34] In such cases blood transfusion should be started at once and surgical consultation obtained. Laparotomy may be needed to control the hemorrhage. Bile peritonitis is a rare but dangerous complication and surgical drainage must be carried out promptly.[22] Bile peritonitis usually occurs in patients with congenital abnormalities of the bile ducts or in those with a small liver which may result in perforation of the gallbladder.

TABLE I
CONTRAINDICATIONS TO NEEDLE BIOPSY OF THE LIVER

I. Absolute:
   1. Inexperienced operator without supervision
   2. Hemorrhagic Disorders
   3. Liver abscesses, or infection in biliary system
   4. Peritonitis

II. Relative:
   1. Uncooperative patient
   2. Protracted severe jaundice
   3. Prolonged extrahepatic obstruction
   4. Pleuritis (requires sub-costal approach)
   5. Ascites

CONTRAINDICATIONS TO NEEDLE BIOPSY OF THE LIVER

Contraindications are listed in Table I. Absolute contraindications mean the biopsy must not be done under any circumstances unless the situation is corrected. Relative contraindication means that the biopsy may be done if a histologic diagnosis is necessary for therapeutic decisions and if an experienced operator is available.[32] Under these circumstances the increased risk to the patient must be fully realized.

No one should attempt needle biopsy without adequate training under the direct supervision of an experienced operator. The morbidity and mortality are much less when experienced operators perform the biopsy. When infection is present in the liver or peritoneum, the needle may introduce pathogenic bacteria into the blood or spread it to other areas of the peri-

toneum.[32] There is an increased risk of bleeding in hemorrhagic disorders. If biopsy is attempted on the uncooperative patient or on a small child, coughing or failure to hold the breath may result in tearing of the liver capsule and severe hemorrhage. Use of thinner needles which are in the liver only a few seconds, such as the Menghini, has reduced the risk of tearing the capsule and biopsies are now safely done in children and uncooperative patients.[16] Patients with protracted severe jaundice have a greater tendency to bleed and Vitamin K_1 should be given prior to biopsy.[34] Biopsy in long standing extrahepatic obstruction carries extra risk due to possible perforation of a dilated bile duct resulting in bile peritonitis. When pulmonary or pleural infection is present, a sub-costal, rather than the usually preferred intercostal approach, should be used.

THE TISSUE SPECIMEN

An adequate biopsy specimen measures 1-2 cm. in length. If smaller fragments are obtained they should be sent to the laboratory as diagnosis may still be possible. The tissue should be gently handled and immediately placed in fixative. Ten per cent buffered formalin is satisfactory. Before fixation a small portion of the biopsy should be taken for culture if there is a suspicion of bacterial or fungal disease. After a few hours fixation the specimen is processed and blocked in paraffin, and sections are cut at 4-5 microns with a sharp knife. We routinely cut multiple sections at three different levels in the block and stain with hematoxylin and eosin.[19] Special stains for organisms or histochemical stains are done as indicated by histologic alterations found in the routinely stained sections.

INDICATIONS FOR NEEDLE BIOPSY OF THE LIVER

The indications for needle biopsy of the liver are divided into relative and absolute.[32] These are listed in Table II. A relative indication means that needle biopsy is used to confirm the clinical diagnosis or serve as a baseline for effectiveness of therapy since clinical and laboratory examinations are usually sufficient to establish a diagnosis. Absolute indications for needle biopsy will be present where biopsy is necessary to establish a definite diagnosis, or to determine therapy. In such situations clinical and laboratory examinations are inadequate and needle biopsy should be done if contraindications are not present.

When open biopsy of the liver is performed both a wedge biopsy and a needle biopsy should be obtained.[19] Subcapsular fibrosis and inflammation are commonly present and make histologic interpretation of wedge biopsies difficult. Often these changes are misleading. If only a single specimen is obtained during surgery, it should be a needle biopsy. Since the surgeon has direct control of hemostasis, needle biopsy does not add to the risk.

ACUTE JAUNDICE

The indications for needle biopsy in acute jaundice are most often relative. Laboratory studies usually divide the patients into three groups: those with liver cell damage, those with cholestasis, and those with hemolytic disease.[32] If studies indicate inclusion in more than one of these groups needle biopsy is indicated to clarify the underlying histologic changes.

Viral Hepatitis: Liver biopsy is not necessary in an obvious case of acute viral hepatitis. It is indicated in cases where the clinical findings are atypical. The combination of histologic changes found in viral hepatitis is usually sufficient for unequivocal pathologic diagnosis.[19, 30] The histologic changes in infectious hepatitis and homologous serum jaundice are identical. In the typical case of viral hepatitis there is eosinophilic and balloon degeneration with portal and lobular infiltration of inflammatory cells. Centro-lobular bile stasis is present in approximately 50% of cases.[11] Acidophilic bodies are commonly found free in the sinusoids. Bile ducts show proliferation and frequently there are focal or extensive areas of collapsed reticulum.

Chemically induced hepatic injury: Chemical injury in the liver can be divided into four groups: chemical poisons, drugs producing pure cholestasis, drugs producing cholestasis and hepatocellular injury, and drugs producing toxic hepatitis.[27]

Chemical poisons: Chemicals, such as carbon tetra-chloride or chloroform, produce zonal fatty infiltration and hepatic cell necrosis. The history and laboratory findings are usually sufficient to establish the diagnosis.

Pure cholestasis: This form of liver damage is produced by drugs such as the anabolic steroids. The bile plugs are usually centrolobular and there is no inflammatory infiltrate. The hepatic cells may show degeneration.[30] Biopsy is indicated when the history is not sufficient to allow separation from extra-hepatic obstruction or allergic drug reaction.

TABLE II
INDICATIONS FOR NEEDLE BIOPSY OF THE LIVER

CONDITION	TYPE OF INDICATION:	COMMENT:
I. Acute jaundice	Usually relative	Entire clotting mechanism must be checked. Extra risk of hemorrhage.
1. Viral hepatitis	Relative	If clinical presentation is atypical.
2. Drug induced	Definite if diagnosis not certain	
3. Early cholestasis	Definite if diagnosis not certain	Contraindicated in presence of infection.
4. Hemolysis	Relative	Histology usually normal except for increased Fe.
5. Jaundice of infancy	Definite	Attempt to determine presence or absence of biliary atresia.
II. Chronic jaundice	Usually definite	
1. Subacute and chronic hepatitis	Definite	
2. Cirrhosis	Definite if patient not terminal	Determine extent of damage for therapy.
3. Storage and metabolic diseases	Definite	Special stains as indicated.
4. Alcoholism	Definite	To establish extent of damage.
5. Without chemical evidence of liver cell damage	Definite	To determine presence of pigment.
6. Late cholestasis	Relative	
7. Primary biliary cirrhosis	Definite	
III. Hepatomegaly	Usually definite	
1. With fever of unknown origin	Definite	Acid fast and fungal stains; culture.
2. Metastatic carcinoma and lymphoma	Definite	Biopsy nodule if possible.
3. Primary carcinoma	Relative	
IV. Clinical investigation and determining effect of therapy	Relative	No extra risk to patient.

Cholestasis with hepatocellular damage (allergic drug reaction): Allergic hepatic injury occurs from a wide variety of drugs and the extent of damage is not dose related.[27] The most common drugs involved are tranquilizers such as chlorpromazine and the anti-diabetic drugs.[20] Usually the reaction is mild, lasting 3-4 weeks. In cases with persistent jaundice or evidence of severe hepatocellular damage, biopsy is indicated to differentiate extrahepatic obstruction, chronic hepatitis, or viral hepatitis from drug reaction. This can be extremely difficult, but findings favoring drug reaction are atypical bile duct proliferation, absence of bile lakes or infarcts, severe portal inflammatory infiltrate, and large numbers of eosinophils.[30]

Toxic hepatitis: Some drugs, such as Cinchophen or halothane[8] produce changes which are similar to those found in viral hepatitis including inflammatory necrosis and presence of acidophilic bodies.[30] The essential clinical information must be given to the pathologist

since the histologic changes are indistinguishable from viral hepatitis.

EARLY CHOLESTASIS

The differential diagnosis of cholestasis presents a great challenge to the clinician and the pathologist. Biopsy is indicated unless there is an obvious cause for the cholestasis. The problem is to differentiate extrahepatic obstruction, which requires surgical intervention, from intrahepatic cholestasis which does not. Unfortunately the histological changes in the two conditions are very similar and in many cases a definite diagnosis cannot be made. In such cases exploratory laparotomy is often necessary. However, careful examination of the specimen may reveal differential points and biopsy should be an integral part of the diagnostic study. The differential diagnosis of acute cholestasis includes extrahepatic obstruction secondary to obstruction of the extrahepatic ducts, cholestatic viral hepatitis, drug injury and idiopathic cholestasis.

Extrahepatic cholestasis: Within the first few weeks less than 20% of specimens will show features which are diagnostic of extrahepatic obstruction.[35] The diagnostic findings are coalescence of bile plugs (bile lakes), and extravasated bile into portal spaces. The remaining cases may show features which are suggestive but not diagnostic of extrahepatic obstruction. These include a moderate portal inflammatory infiltrate, often with a predominance of acute inflammatory cells, fibroblastic proliferation of the portal spaces, proliferation of typical bile ducts, dilatation of bile ducts, and zonal necrosis of hepatic cells without inflammatory infiltrate.[30] Cholestasis is, of course, present in both intra and extrahepatic obstruction.

Cholestatic viral hepatitis: This form of viral hepatitis is characterized by central cholestasis, mild portal inflammatory infiltrate, ductular proliferation, and mild liver cell damage. Histologically, this entity is often impossible to distinguish from cholestasis produced by drugs, but it has few of the features of extrahepatic obstruction.[30]

Drug induced cholestasis: The changes have been discussed above.

Idiopathic cholestasis: This is a rare disease characterized by central cholestasis without liver cell damage or inflammatory infiltrate. Similar findings have been reported in pregnancy.

In summary, needle biopsy is often unreliable in early cholestasis. However, diagnostic features may be present which allow separation of extrahepatic from intrahepatic obstruction, or even to separate some forms of intrahepatic obstruction. Needle biopsy is definitely indicated when the clinical diagnosis is uncertain.

Hemolytic jaundice: Biopsy is rarely indicated. Histologic changes are usually absent except for increased iron.

JAUNDICE OF INFANCY

Needle biopsy may be of aid in differentiating neonatal hepatitis from biliary atresia.[16] Correct diagnosis is important because the mortality in neonatal hepatitis is high if surgery is performed.[30] Most laboratory examinations are of little use in distinguishing between these two conditions. However, falling levels of bilirubin over a period of weeks is strong evidence of hepatitis and needle biopsy may be used in an attempt to confirm the diagnosis.[7] If the Menghini 1-2 second technique is used needle biopsy is a safe procedure for infants. Study of our material indicates that operation should not be performed in those cases where the diagnosis is not certain until a patient is three months of age, and even later if a falling trend is noted in serial bilirubins.[7]

Neonatal hepatitis: This entity is characterized by parenchymal cells with 2-30 or more nuclei, prominent cholestasis, disorganization of hepatic architecture, and intralobular necrosis. In a few patients intralobular fibrosis and cirrhosis may develop, but over 60% of infants will recover if surgery is not performed.

Biliary atresia: Giant cell transformation may be found in biliary atresia and is of little aid in separating this condition from neonatal hepatitis. Characteristic features found in biliary atresia are marked bile duct proliferation, bile lakes or infarcts, and portal fibrosis as well as cholestasis.

In some cases the changes described above will be focal and needle biopsy material may not be diagnostic, or can be misleading. However, serial bilirubin determinations and needle biopsy offer the best available methods for early diagnosis. If the diagnosis is not certain after three months, then laparotomy is indicated. At the time of operation a cholangiogram should determine the surgeon's course when this study can be done. If a cholangiogram cannot be performed, open biopsy of the liver is indicated. Such biopsy material will allow separation of extrahepatic atresia and giant cell hepatitis in over 90% of cases.[7]

TABLE III

HISTOLOGICAL CLASSIFICATION OF CIRRHOSIS

I. Nutritional (portal)
   1. Florid cirrhosis

II. Post necrotic

III. Post hepatitic

IV. Biliary
   1. Primary
   2. Secondary

V. Pigmentary

VI. Cardiac

VII. Mixed

CHRONIC JAUNDICE

Subacute and chronic hepatitis: Some patients with acute viral hepatitis fail to heal within 6-8 weeks and develop chronic hepatitis which may persist for years. These patients may or may not be jaundiced. Needle biopsy is indicated for diagnosis and for following the results of therapy. Histologically the pattern is quite diagnostic with confluent necrosis and intense chronic inflammatory infiltrate. Inflammatory cells surrounding small groups of liver cells is the characteristic finding.[38] If the process progresses fibrous septa begin to radiate from the portal spaces and ductular proliferation is found. Clinically, these patients show continuing evidence of hepatocellular necrosis. A clinical variant of chronic hepatitis has been reported as lupoid or plasma cell hepatitis.[5] It occurs predominantly in young women, about 50% have a positive LE test, and many others have high gamma globulin.[1] Histologically, the only difference from chronic hepatitis is a predominance of plasma cells in the inflammatory infiltrate. A diagnosis of lupoid or plasma cell hepatitis can only be made by combining the histological and clinical findings. Although an autoimmune mechanism has been postulated, the exact etiology of this syndrome is unknown.[21] It may be a clinical variant of chronic hepatitis.[38]

Cirrhosis: Needle biopsy is useful in establishing a diagnosis and determining the extent of damage to the liver. In many cases morphological classification of cirrhosis can be made. We prefer to use the classification of Gall[13] which is readily applicable to needle biopsies (see Table III). No system of classification is entirely satisfactory, and the morphological variants have no etiological significance. For example, it is known that alcoholic or nutritional cirrhosis may go on to post necrotic cirrhosis, [29] and the etiology of post hepatic cirrhosis is not known.[13] In general, the different types of cirrhosis are classified by the width of the fibrous bands, the size of the regenerative nodules and the extent of the architectural destruction.

Storage and metabolic diseases: Early and absolute diagnosis can often be made only by biopsy. The presence of iron can be diagnosed by needle biopsy, but it must be remembered that approximately 40% of normal livers and 60% of cirrhotic livers at autopsy contain stainable iron. Large quantities of iron are abnormal, but differentiation of hemosiderosis from hemochromatosis is difficult.[19] The Menghini needles have made biopsy in amyloidosis relatively safe, and this has become an acceptable method of diagnosis.[37] Glycogen storage, mucopolysaccahride storage disease and Gaucher's disease present diagnostic histologic patterns.

Alcoholism with jaundice: Needle biopsy is indicated for purposes of prognosis. The extent of hepatic cell necrosis, fibrosis and the number of Mallory bodies will determine the usefulness of therapy.[6]

Chronic jaundice without liver cell disease: Three entities are present in this category: Chronic idiopathic jaundice (Dubin-Johnson), constitutional hepatic dysfunction (Gilbert), and familial non-hemolytic jaundice (Rotor).[2] Needle biopsy is definitely indicated. All three syndromes are forms of benign familial jaundice and can usually be separated by combining the clinical findings with the needle biopsy. In Gilbert's disease, the bilirubin is almost all nonconjugated, whereas in the other two it is mainly conjugated. The histology is normal in Gilbert's and Rotor's syndromes, but in the Dubin-Johnson syndrome a brown-black pigment is diffusely spread throughout the liver.[10]

Late cholestasis: Needle biopsy in extrahepatic obstruction present for more than four weeks, entails a greater risk because of possibility of entering a dilated bile duct. In late extrahepatic obstruction concentric portal fibrosis develops which is highly diagnostic.[35] Once biliary cirrhosis develops the histologic changes are usually typical.

Primary biliary cirrhosis: This entity usually occurs in menopausal females and is characterized clinically by long standing jaundice, pruritis, xanthomatous skin lesions and hypercholesterolemia.[28, 33] Early primary biliary cirrhosis is difficult to separate from chronic hepatitis and diagnosis depends on correlation of clinical and histologic findings. The patients eventually develop cirrhosis which is characterized by a paucity of proliferating bile ducts within wide fibrous bands.[33] There is some doubt that primary biliary cirrhosis is a specific pathologic entity.[38]

HEPATOMEGALY

Liver needle biopsy is of great value in diagnosing the underlying cause of hepatomegaly.

Fever of unknown origin: Hepatic changes are common in infectious diseases. In most bacterial diseases the changes are non-specific and have been designated as reactive hepatitis.[31] However, granulomatous processes frequently involve the liver and at times needle biopsy is the only method of diagnosis. Cultures should always be done in any case of suspected infectious disease. When granulomas are present stains for tubercle bacilli and fungi must be done. If no organisms are found a specific histologic diagnosis cannot be made,[19] but the type of granuloma present often gives a clue to the underlying process.

Metastatic carcinoma and lymphoma: It is surprising how frequently portions of metastatic carcinoma can be obtained in the needle specimens.[25] Indications are definite when the diagnosis of hepatomegaly is in doubt or if curative cancer surgery is planned in the presence of hepatomegaly. About one-third of patients with lymphomas have clinical evidence of hepatic disease, and a diagnosis may be made from needle biopsy.

Primary carcinoma: Biopsy may be done to establish a diagnosis. Biopsy is often contraindicated in primary carcinoma because of defective coagulation.

CLINICAL INVESTIGATION

Much new knowledge concerning liver disease has come from study of tissue removed from patients by needle biopsy.[32] Such biopsies must be taken at no extra risk to the patient. Liver biopsy specimens have been used in electron microscopic, histochemical and biochemical studies. Serial biopsies of patients have further elucidated the natural history of several different liver diseases.

TABLE IV

CONDITIONS IN WHICH LIVER BIOPSY MAY BE HELPFUL FOR DIAGNOSIS, PROGNOSIS, AND RESULTS OF THERAPY

1. Acute viral hepatitis
2. Hepatic injury due to drugs and poisons
3. Intrahepatic cholestasis
4. Extrahepatic cholestasis
5. Neonatal hepatitis
6. Biliary atresia
7. Chronic hepatitis
8. Lupoid hepatitis
9. Storage and metabolic diseases
10. Cirrhosis
11. Primary biliary cirrhosis
12. Alcoholism with jaundice
13. Granulomatous diseases
14. Lymphomas and leukemias
15. Metastatic carcinoma
16. Amyloidosis
17. Chronic idiopathic jaundice (Dubin-Johnson)
18. Idiopathic hepatomegaly
19. Hemosiderosis

RELIABILITY

Interpretation of percutaneous needle biopsy of the liver is a reliable procedure in most instances.[4] Tumors are diagnosed in 70-80% of cases when correlated with autopsy findings. Cirrhosis is diagnosed in 96% of instances, but classification of type is less accurate. Extrahepatic obstruction present more than four weeks can be diagnosed in 70-80% of cases, but the figure is much lower in earlier cases. Primary biliary cirrhosis, drug hepatitis, and plasma cell hepatitis usually require clinical data for correct diagnosis.[19] The various forms of cholestasis can be separated in only 40-50% of cases. A partial list of diseases which may be diagnosed by needle biopsy is in Table IV.

Needle Biopsy of the Kidney

Percutaneous needle biopsy of the kidney is not as widely used as needle biopsy of the liver. The procedure is technically more difficult to perform, and a high degree of skill is required to obtain adequate specimens with minimal risk to the patient.[26] However, it is an established procedure which is of great value in the diagnosis of renal disease.[14, 15, 26]

Similar precautions are observed in renal biopsy as in liver biopsy.[26] When needle biopsy is done the patient must be hospitalized. A

TABLE V

CONTRAINDICATIONS TO NEEDLE BIOPSY OF THE KIDNEY

I. Absolute:
1. Untrained operator
2. Hemorrhagic disorders
3. Anemia (less than 10-11 gram hgb.)
4. Uncooperative patient
5. Tumor, non-metastatic
6. Renal A-V fistula
7. Single kidney
8. Perinephric abscess
9. Hydro-or pyonephrosis
10. Terminal illness

II. Relative:
1. Hypertension (greater than 160/110)
2. Uremia
3. Severe arteriosclerosis
4. Inability to lie flat
5. Renal infection
6. Low blood volume

complete history and physical examination is required, including careful questioning concerning hemorrhagic disorders. Careful urinalysis and renal function studies should be done prior to biopsy. Prebiopsy studies include a prothrombin time, Lee-White clotting time, and cross-matching of one unit of blood. Unless the patient is azotemic an intravenous pyelogram is used to localize the kidneys, and to prove that both kidneys are present. If azotemia is present a plane film of the abdomen will usually visualize the kidneys. Two hours and 24 hours following biopsy a midstream urine sample is examined for red cells. Urinalysis must then be done daily until the hematuria ceases, or returns to the prebiopsy level. After biopsy vital signs are checked in the same manner as following needle biopsy of the liver.

RISKS AND COMPLICATIONS

When carefully performed by an experienced operator needle biopsy of the kidney is no more hazardous than needle biopsy of the liver. In 4000 percutaneous needle biopsies of the kidney reviewed in the literature there were two deaths; a mortality of 0.12%.[9] Microscopic hematuria follows almost every biopsy but ordinarily clears within 48 hours. Gross hematuria is rare, and almost always subsides spontaneously. Bleeding may be delayed for up to five days or longer and patients must be carefully observed for five days and have no strenuous activity for ten days.[26] Perirenal hematoma occasionally occurs, but usually subsides without surgical intervention.[17] Severe retroperitoneal hemorrhage is the most dangerous complication. The post-biopsy patient must be carefully observed for the signs and symptoms of shock and blood transfusion started promptly if indicated. If shock develops surgical consultation is obtained promptly and exploration carried out if transfusion does not restore normal blood pressure and pulse. Delay can be fatal in the presence of retroperitoneal hemorrhage.

Minor complications are common. The majority of patients complain of mild discomfort, or muscle soreness around the site of puncture. This subsides within a few days.

CONTRAINDICATIONS TO NEEDLE BIOPSY OF THE KIDNEY

These are tabulated in Table V. Absolute and relative contraindications have been defined previously. Untrained operators should never attempt percutaneous needle biopsy. Retroperitoneal hemorrhage, and retroperitoneal spread of infection or tumor are the main complications of kidney biopsy. Contraindications must be strictly observed to prevent these complications.[14] Uncorrectable abnormalities of blood coagulation contraindicate biopsy. Because some bleeding always follows biopsy, moderate or severe anemia must be corrected prior to biopsy. An A-V fistula will bleed massively if penetrated by the needle. Uncooperative patients may move while the needle is in the kidney which can cause tearing of blood vessels resulting in hemorrhage. Adequate specimens usually cannot be obtained from uncooperative patients.

If biopsy is done when relative contraindications are present, the operator must be aware of the greater risk to the patient. In these circumstances careful post-biopsy observation is essential.

THE TISSUE SPECIMEN

The specimen should include cortical tissue containing a minimum of five glomeruli (average 8-15). In 10-15% of biopsies renal medulla will be present in the specimen.[26] Tiny fragments of kidney often contain an adequate number of glomeruli for diagnosis and should be submitted. The tissue is fixed and processed in the same manner as liver specimens, then multiple sections are cut at 3-4 microns at three different levels in the paraffin blocks.[19] In addition to the hematoxylin and eosin stains, a

TABLE VI
INDICATIONS FOR NEEDLE BIOPSY OF THE KIDNEY

CONDITION:	TYPE OF INDICATION:	COMMENT:
I. Acute renal disease		
1. Acute glomerulonephritis	Relative	Usually only in atypical cases.
2. Acute renal failure	Definite	Establish diagnosis and value of dialysis.
3. Acute pyelonephritis	Relative	Cultures.
4. Allergic reactions	Relative	Establish diagnosis.
5. Idiopathic hematuria	Definite	
II. Nephrotic syndrome	Definite	Only way to establish underlying histologic changes and evaluate prognosis and response to therapy.
III. Chronic renal disease		
1. Chronic glomerulonephritis	Relative	
2. Collagen diseases	Definite	Establish extent of renal damage.
3. Idiopathic proteinuria	Definite	Establish diagnosis.
4. Idiopathic hypertension	Relative	
5. Chronic renal failure	Relative	Needed if dialysis is considered.
6. Granulomatous inflammation	Relative	Acid fast and fungus stains; cultures.
7. Chronic pyelonephritis	Relative	
8. Vascular disease	Relative	
9. Storage and metabolic diseases	Relative	Definite if disease causes changes in kidney.
10. Amyloidosis	Definite	
IV. Neoplasms		Contraindicated in primary tumors.
1. Myeloma	Definite	
2. Lymphoma and leukemia	Relative	
V. Congenital malformations	Relative	
VI. Clinical investigation and response to therapy	Relative	No extra risk to patient.

PAS stain should be done on one level for study of the basement membranes. Special stains are done as indicated by tissue alterations

INDICATIONS FOR NEEDLE BIOPSY OF THE KIDNEY

The indications for needle biopsy are listed in Table VI. Relative and absolute indications have been previously defined in the section on needle biopsy of the liver.

ACUTE RENAL DISEASE

Acute glomerulonephritis: Needle biopsy is rarely necessary for typical cases of acute glomerulonephritis. When the urine is abnormal urinalysis is the best way of following the patient. If the urine is negative, active disease cannot be precluded and biopsy may be needed to determine the activity of disease.[14] In patients with atypical clinical presentation, biopsy is indicated.

TABLE VII

SOME OF THE HISTOLOGIC DIAGNOSES IN THE NEPHROTIC SYNDROME

1. Membranous glomerulonephritis
2. Proliferative glomerulonephritis
3. Mixed glomerulonephritis
4. Focal glomerulonephritis
5. Diabetic glomerulosclerosis
6. Amyloidosis
7. Lupus nephritis
8. Radiation nephritis
9. Renal vein thrombosis
10. Drug injury
11. Normal histology
12. Unclassified

The histologic pattern is often diagnostic, although some patients with acute glomerulonephritis have no histologic alterations. The glomerular changes, when present, may be divided into three groups: proliferative, exudative and hemorrhagic.[9] Proliferative lesions are characterized by an increased number of endothelial cells giving rise to the "hypercellular" glomeruli which contain a decreased number of red cells. This may progress to focal scar formation or formation of crescents seen in so-called sub-acute glomerulonephritis. In the exudative type leukocytes and foci of necrosis are present in the glomeruli. The hemorrhagic lesions show increased numbers of red cells in Bowman's space and in the glomeruli. Combinations of these three lesions are frequently found. In focal proliferative glomerulonephritis, there are focal proliferative and exudative changes within the affected glomeruli.[40]

Acute renal failure: Needle biopsy is definitely indicated in cases of acute renal failure to determine if the underlying lesion is reversible.[14, 15] If acute changes are present hemodialysis is indicated to sustain life. When the renal failure is secondary to chronic irreversible renal disease there is little need to use dialysis. The pathology in acute renal failure varies from the "shock" kidney with hemoglobin in the tubules to the anuric types of glomerulonephritis, pyelonephritis, or toxic nephritis.[15]

Acute pyelonephritis: Needle biopsy is rarely indicated except in atypical cases. The focal nature of the disease makes histological diagnosis somewhat unreliable. Cultures of part of the specimen should always be done when infection is suspected.[15, 40]

Allergic reactions: Needle biopsy may be useful in establishing a diagnosis or in evaluating

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the extent of renal involvement. The typical histologic changes are a necrotizing vasculitis with or without glomerulitis.

Idiopathic hematuria: If cystoscopy, intravenous pyelograms and retrograde pyelograms have failed to demonstrate neoplasm or other causes of the hematuria, needle biopsy is definitely indicated. In some cases renal parenchymal disease will be found. This is usually pyelonephritis or glomerulonephritis.

NEPHROTIC SYNDROME

The nephrotic syndrome is a clinical entity, occurring at any age, characterized by albuminuria, low serum albumin, edema and often hypercholesterolemia.[9, 18, 39, 40] The histologic changes in the kidney are varied since many different diseases manifest clinically as the nephrotic syndrome. Many of these diseases require different types of therapy. Needle biopsy is of the utmost importance for diagnosis of the exact histologic changes in a given case. Rarely can clinical and laboratory examination clarify the underlying process causing the nephrotic syndrome.[14] In Table VII is a list of some of the histological changes in the kidney which may present as the nephrotic syndrome.[15, 18] In one large series of adult patients the distribution of these disease processes was as follows: 28% membranous glomerulonephritis, 6% proliferative glomerulonephritis, 12% mixed proliferative and membranous glomerulonephritis, 11% lipoid nephrosis, 18% lupus nephritis, 3% amyloidosis, 15% diabetic glomerulosclerosis, 4% renal vein hypertension and 1% arteriolar nephrosclerosis.[18] In children up to 60% of biopsies obtained within six months of the onset of the nephrotic syndrome are normal or show minimal changes.[39]

These figures vary from series to series, but in most reports membranous glomerulonephritis is the most common lesion in adults. Membranous glomerulonephritis is characterized by thickening of the basement membranes of the glomeruli. This is best demonstrated by the PAS stain. The proliferative and focal forms of glomerulonephritis are histologically the same as those found in acute glomerulonephritis. Mixed types of glomerulonephritis, such as mixed proliferative and membranous changes, are not uncommon. Diabetic glomerulosclerosis and amyloidosis present characteristic patterns.

Needle biopsy is also valuable for determining prognosis and effects of therapy. Patients with the nephrotic syndrome whose renal biopsies are normal or who have minimal changes, generally respond well to steroids.[14] Those with more severe lesions show less response to therapy. Serial needle biopsy has become a valuable adjunct to functional tests in determining the effectiveness of treatment. Striking histologic healing has been demonstrated in many patients with glomerulonephritis who have been treated with steroids.

CHRONIC RENAL DISEASE

Chronic glomerulonephritis: Clinical examination is often sufficient for diagnosis; needle biopsy is indicated in cases where the diagnosis is not certain. Unfortunately, in some cases histologic examination may be of little value since the far advanced stages of many different renal diseases are similar.[19] In less advanced cases a diagnosis of chronic glomerulonephritis may be made.

Collagen diseases: Systemic lupus erythematosis is the collagen disease in which renal biopsy should always be done. At least one-third of patients with systemic lupus and normal renal function will be shown to have lupus involvement of the kidney.[14] The early renal manifestations of lupus nephritis can be controlled by steroids, but later in the disease treatment is of little value. It is imperative that a diagnosis of lupus nephritis be made as early as possible and renal biopsy is the best method available.[40] Histologically lupus nephritis begins with a local and focal proliferation of endothelial cells in the glomeruli. Following this there is thickening of the capillary basement membrane. At this stage the changes are similar to membranous or proliferative glomerulonephritis, and therapy is effective. In the more advanced cases other features of lupus nephritis such as fibrinoid necrosis, hematoxylin bodies and wire loops are seen.[40] Therapy is of limited value when these histologic changes are present.

Needle biopsy can be of value in estimating the degree of renal involvement in scleroderma, polyarteritis nodosa, and rheumatoid arthritis.

Idiopathic proteinuria: Any patient with proteinuria may excrete large amounts of protein when erect. Thus patients with glomerulonephritis may be diagnosed as having orthostatic proteinuria. Needle biopsy is definitely indicated in any patient who has unexplained proteinuria. In some series as high as 50% of patients clinically diagnosed as orthostatic proteinuria have parenchymal renal disease,

usually glomerulonephritis.[14] Even if the biopsy is normal, and other studies show no evidence of renal disease, it is valuable for the patient to know that there is no underlying renal disease.

Idiopathic hypertension: In a highly selected group of patients with essential hypertension a 20% incidence of underlying renal disease was found by needle biopsy.[14] Biopsy is not generally accepted as a part of the diagnostic regime in hypertension because of the increased danger of hemorrhage. At present needle biopsy should be done only in carefully selected hypertensive patients.

Chronic renal failure: Needle biopsy has little to offer the terminal patient and should not be done in these circumstances. However, some patients with chronic renal failure may be considered for therapy. Needle biopsy is then indicated to determine if dialysis or steroids will be of benefit.

Granulomatous inflammation: Although granulomas may be found in the kidney, they are more frequently detected in the liver and needle biopsy of that organ should be done first. Cultures of a portion of the biopsy specimen are mandatory. Special stains for fungi and tubercle bacilli are done if granulomas are found in the specimen.

Chronic pyelonephritis: The focal nature of the disease decreases the usefulness of biopsy and there has been poor correlation between cultures of tissue and urine cultures.[40] The clinical and radiographic findings are usually diagnostic. However, patients with obvious chronic pyelonephritis on one side considered for unilateral nephrectomy should have needle biopsy of the opposite kidney prior to surgery. If chronic pyelonephritis is present on the opposite side, nephrectomy is contraindicated.

Vascular disease: There is an extra risk of hemorrhage if biopsy is done in the presence of severe arteriosclerosis. Biopsy is helpful in the diagnosis of cortical necrosis, infarcts, renal vein thrombosis and sickle cell nephropathy. Unless medulla is included in the biopsy, differentiation between cortical necrosis and infarcts cannot be made.[19] Both show extensive coagulation necrosis. In renal vein thrombosis the renal parenchyma shows hemorrhagic necrosis. In sickle cell nephropathy the glomeruli are filled with sickle cells and in some cases there are areas of hemorrhage.



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Storage and metabolic diseases: Needle biopsy is very useful in assessing the extent of renal involvement in diabetes.[18] At times diabetic glomerulosclerosis will present as the nephrotic syndrome. Histologically diabetic glomerulosclerosis has two forms: the diffuse and the nodular. Biopsy is indicated in storage diseases in which anatomical changes may be found in the kidney.

Amyloidosis: Needle biopsy is useful, and the histologic findings are diagnostic when metachromatic stains are used.

NEOPLASMS

Needle biopsy is generally not useful in the diagnosis of renal tumors except in the case of myeloma. Biopsy is generally felt to be contraindicated in primary tumors because of danger of spreading tumor cells outside the kidney.[14] X-ray and cytology are usually adequate to diagnose renal neoplasms when they are large enough to be biopsied percutaneously.

Congenital malformations: Most of the congenital diseases of the kidney produce no lesions by light microscopy.[3] The presence of large cysts contraindicates needle biopsy. Radiographic and chemical studies are superior methods of diagnosing congenital diseases.

CLINICAL INVESTIGATION

Electron microscopy of specimens obtained by percutaneous biopsy has been useful in elucidating some of the fine structural changes in the various types of glomerulonephritis.[40] Perhaps the most fruitful use of renal biopsy for investigation has been studies with serial biopsies. The natural history of renal disease is much better studied by this method than by examination of autopsy material. Needle biopsy has been very valuable in determining the effectiveness of new drugs. Tissue culture, histochemical, and biochemical studies have also been done with biopsy material.

RELIABILITY

Percutaneous needle biopsy of the kidney is a reliable method of diagnosis if the disease process is diffuse and if an adequate specimen can be obtained. Obtaining an adequate specimen of kidney is technically more difficult than obtaining a similar specimen of liver. Once an adequate specimen has been obtained, histologic interpretation is usually accurate, although minimal changes may be difficult to classify. The value and problems of histological interpretation can be seen from the following figures.

TABLE VIII

CONDITIONS IN WHICH RENAL BIOPSY MAY BE HELPFUL FOR DIAGNOSIS, PROGNOSIS, AND RESULTS OF THERAPY

1. Nephrotic syndrome
2. Oliguric renal failure
3. Collagen diseases
4. Glomerulonephritis
5. Diabetes mellitus
6. Orthostatic proteinuria
7. Pyelonephritis
8. Amyloidosis
9. Myeloma and lymphoma
10. Renal vein thrombosis
11. Cortical necrosis
12. Allergic reactions
13. Storage and metabolic diseases
14. Granulomatous diseases
15. Radiation nephritis
16. Idiopathic hematuria
17. Sickle cell nephropathy
18. Idiopathic hypertension
19. Nephrosis secondary to drugs and poisons

In one series 48% of the histologic diagnosis confirmed the clinical impression, 27% of the histologic diagnosis differed from the clinical diagnosis, and 25% of the specimens showed either normal tissue or minor unclassifiable changes.[26] The presence of normal tissue in the nephrotic syndrome or glomerulonephritis is significant since it signifies that the prognosis is good and treatment will probably be effective. Of course, normal tissue can be misleading in focal disease processes.

In Table VIII is a list of some of the diseases which may be diagnosed by needle biopsy.

SUMMARY

Percutaneous needle biopsy is a valuable method for determining diagnosis, prognosis and effectiveness of therapy in diseases of the liver and kidney. Needle biopsy must never be performed casually, nor is it to be used as a substitute for careful clinical and laboratory evaluation. However, clinical methods are often inadequate to determine underlying histologic changes. Needle biopsy, when done with strict adherence to contraindications, offers a method of tissue diagnosis with a minimum of risk and discomfort to the patient. In many instances the histologic changes are sufficient for a definitive diagnosis to be made. Even if this is not possible, exclusion of certain diseases can be of

aid in determining therapy. When therapeutic decisions depend upon tissue diagnosis the indications for biopsy are definite. The clinical circumstances where needle biopsy is definitely indicated in liver disease are: jaundice or cholestasis of undetermined etiology, hepatomegaly, fever of unknown origin, and storage and metabolic diseases. The clinical circumstances where needle biopsy is definitely indicated in renal disease are the nephrotic syndrome, acute renal failure, idiopathic proteinuria and hematuria, and lupus erythematosis.

When clinical examination is sufficient to establish the diagnosis, the indications for biopsy are relative. Needle biopsy may be done in these circumstances to confirm a diagnosis or to serve as a baseline for therapy. For clinical investigation needle biopsy is valuable in following the course of a disease, evaluating the effectiveness of new drugs, and determining hepatic or renal side reactions to new drugs.

The limiting factors to the usefulness of needle biopsy are the necessity for diffuse disease to be present, the numbers of well trained clinicians available to perform the biopsy, and the skill and interest of the examining pathologist.

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Editor's Note: Due to space limitations, the remainder of the references have been omitted. Requests should be addressed to the **South Dakota Journal of Medicine,** 711 North Lake Avenue, Sioux Falls, South Dakota.

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WALK, DON'T NAP AFTER EATING

A short walk after a hearty meal is better than a nap which may lead to a fatal heart attack, according to Dr. Gerhard Volkheimer of Humboldt University Medical School in Germany. He pointed out that fatty chyle — a fluid produced during digestion — can accumulate in the thoracic duct during complete rest right after consuming a rich hearty dinner. Any sudden movement upon awakening may send enough chyle into the blood stream to cause a fat embolism and block a vital artery.

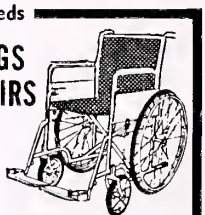
Food and Nutrition News
Vol. 36, No. 4, January, 1965

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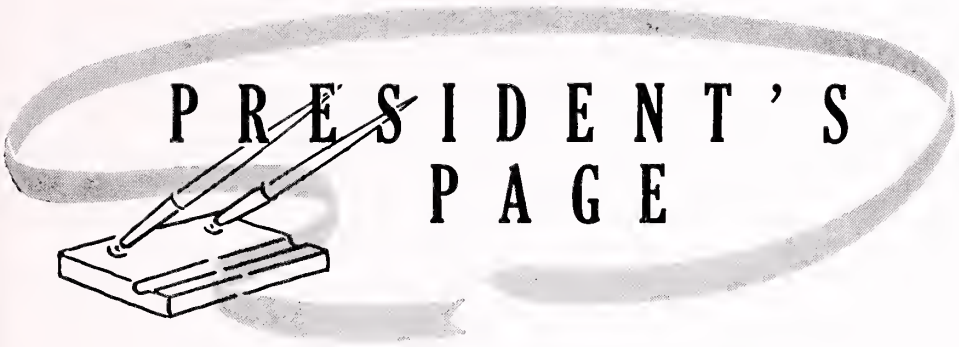
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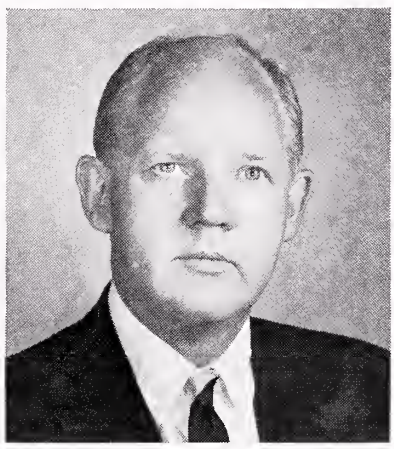
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Dear Fellow Members,

We have in our State, as in all other states, some few practicing physicians who do not belong to the State Medical Association, and a number of others who belong but do not actively participate. Since any organization is only as strong as its members, I would like to urge you to recruit those physicians who do not belong and to activate those who belong but do not participate.

In order to do this, it might be well to explain just what the State Medical Association means to the doctors of the State and just what it does for the doctors (since we often hear that the Medical Association does nothing and that there is no reason for these recalcitrant individuals to belong or to participate). In a very basic sense, your State Medical Association not only gives you the right to practice medicine, but protects that right as long as you continue to practice in an accepted manner. The Medical Association furnishes names to the governmental authorities who appoint the examining and licensing boards that give you the right to practice. While it is true that this is a right and a privilege given to you by the governmental authorities of the State, its standards are set and its requirements laid down by the State Medical Association through its participating members. Without some type of medical organization, your rights would be either nonexistent or in serious jeopardy and would be controlled by those who know nothing about the practice of medicine or the requirements thereof.

Your State Medical Association is the voice to which the governmental agencies, as a group, come in essentially all matters concerning medical practice and public health. Your State Director of Public Health is a licensed physician and a member of the State Medical Association. His policies and programs are those developed in conjunction with the principles of good medical practice and with the cooperation of the members of the State Medical Association.

The legislators come to state medical organizations for information and advice in preparing public health and medical legislation. The Association works closely with the medical school in promoting and improving medical education and provides the funnel through which all our programs, refresher courses, publications and organized scientific meetings are poured. This benefits each and every practitioner of medicine, whether he belongs and participates or not. Is it fair, then, to let others carry your burden for you?

You may wonder why your dues are among the highest of any State Association in the country, and perhaps I can help explain it to you. You must realize that our Association with some 400 members must perform all the functions that a state medical association in New York, Florida, California or other populous states having thousands of doctors as members must do. Not only must we perform all these functions, but we must perform them over an area as large as most states and larger than many. This involves a great deal of time and travel, which as you well know costs money. Your State Medical Association only performs those functions it is requested to perform by its members, and these functions seem to increase by the year. If we compare our dues with the size of the state and the number of members, we will find that we are not overly-assessed and, in fact, get a great deal for our money.

The time is probably coming when we will either have to increase our dues or decrease our functions. Since this is strictly a nonprofit institution, we are not allowed to accumulate any significant surplus.

An idea of what the participating members of the society contribute to its function may be gained from the fact that the councilors', officers' and committee members' travel expenditures are in the neighborhood of $7,000 each year on your behalf. This expenditure is only a travel figure of actual miles traveled at 10c per mile, plus a very meager estimate for lodging and food away from home. It does not take into consideration any estimate of value for time lost away from the office, or for telephone calls and many, many hours spent evenings and weekends in your behalf. I have never known an individual in our state association who has profited in any way financially from being a member of a committee or an official of the association. This is a function that these many dedicated people perform for you as individuals, and for the profession as a whole.

One past president of several years ago, by a very careful recording, estimated that being president cost him in the neighborhood of 7-10 thousand dollars. I, personally, think this is a great deal to ask of anyone, and it is improper to ask quite so much of many other committee and commission members who devote great time and effort in your behalf.

I am trying to impress upon you what your Medical Association does for you; how hard its officers, commission and committee members work for you; and the fact that it touches upon the very right to practice of every physician in the State. Without your Association, chaos would result. With the strong and active participation of all of you, it will work to your benefit.

Fraternally yours,

James P. Steele, M.D.

President

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Pop's Proverbs

A gaudy cover does not guarantee a good book.

NEWS NOTES

The 1965 Scientific Session of the American Cancer Society will be held at the Drake Hotel in Philadelphia on June 16, 1965.

This symposium on "Hormones and Chemotherapy for Cancer—A Critical Appraisal" is open to all members of the medical and dental professions, and students. For full information write to the Director of Professional Education, American Cancer Society, 219 East 42nd Street, New York, New York 10017.

* * *

The Fifth District Medical Society held an election of officers at their last meeting. The officers are as follows: President: **David Buchanan, M.D.**, Huron; Vice-President: **James DeGeest, M.D.**, Miller; Secretary-Treasurer: **G. M. Huet, M.D.**, Huron; Delegates: **Ted Hohm, M.D.** and **William Hanson, M.D.**; Alternate Delegates: **D. Buchanan, M.D.** and **G. Huet, M.D. Ted Hohm, M.D.** is the nominee for the Nominating Committee.

* * *

The first Cleft-Lip-Cleft Palate Clinic in the State of South Dakota was held on January 7th at the Speech and Hearing Clinic of the University of South Dakota. Specialists representing Otolaryngology-Reconstructive Surgery, Orthodontics, Audiology and Speech Therapy were present at the clinic. It is hoped to hold future clinics at about two month intervals, alternating between the University and The Crippled Children's Hospital and School in Sioux Falls, until the clinic system is developed. Later clinics will be held in representative cities throughout the State. Persons interested in the clinics can obtain information from the Speech and Hearing Clinic of the University of South Dakota.

* * *

A total of 10,735 medical and health films were lent to physicians, hospitals, medical schools or other professional groups by the American Medical Association Film Library during 1964.

Many of the films were employed as educational material for physicians, medical students and nurses.

The number of bookings was the greatest ever recorded at the library. In fact, total bookings have increased each year since 1955 when 3,007 were recorded, according to an analysis prepared by Ralph Creer, director of the AMA Department of Medical Motion Pictures and Television.

Creer also noted continuing wide distribution and acceptance of the catalogue of selected "Medical and Surgical Motion Pictures," published by the AMA. A current list of these films is available from the AMA.

* * *

The Mitchell District Medical Society held their annual election of officers. The new officers are as follows:

President: **B. Skogmo, M.D.**, Vice-President: **R. Hockett, M.D.**, Secretary-Treasurer: **L. W. Tobin, M.D.**, Delegates: **J. Berry, M.D.** and **J. O. Mabee, M.D.** and Alternate Delegates: **C. F. Binder, M.D.** and **J. P. McCann, M.D.**

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED



R. H. Quinn, M.D., Sioux Falls, is shown accepting the AMPAC Award for the State of South Dakota, at the AMA Meeting in Miami. The plaque was presented to him by the master of ceremonies, Milton Berle, at the dinner banquet. The Awards were given to those State Medical political action committees who have made outstanding contributions to the political action movement and have demonstrated a high degree of political leadership.

The Yankton District Medical Society held their annual election of officers at their last meeting. The officers are as follows: President, **R. F. Thompson, M.D.;** Vice-President, **D. M. Reade, M.D.;** Secretary, **G. Knabe, M.D.;** Treasurer, **N. B. Saoi, M.D.;** Delegates, **George Knabe, M.D.** and **R. J. Foley, M.D.;** Alternate Delegates, **L. Behan, M.D.** and **H. Andre, M.D.**

* * *

Drs. C. V. Auld and **A. C. Shouse,** Plankinton, were honored for their service to the State Training School at Plankinton.

Both men have served the Training School for over 50 years in their capacities. Dr. Auld is an M.D. while Dr. Shouse is a dentist.

Supt. Edward Green of the Training School presented each of the men with a certificate from the governor's office and a plaque from the Training School.

* * *

Dr. Thomas W. Murphy, veteran Bristol doctor, was honored at the Day County Hospital, when the Bristol Commercial Club presented him with a bronze plaque on his 87th birthday. The plaque, hand engraved, has the following inscription: "In Honor of Doc Murphy, in appreciation and recognition of faithful service since 1933, Bristol Commercial Club."

* * *

The Hahnemann Medical College and Hospital is sponsoring a Postgraduate education course on April 26-29, 1965 and the title is the 14th Hahnemann Symposium Mechanisms and Therapy of Cardiac Arrythmias. The director is Leonard S. Dreifus, M.D. The Course will be held at the Sheraton Hotel in Philadelphia, Pennsylvania.

* * *

At the regular monthly meeting Thursday, Jan. 21, of the medical staff of the Gettysburg Hospital, the annual election of officers was held. The new officers are as follows: President and Chief of Staff, **E. W. Urbanyi, M.D.;** Vice-President **E. H. Collins, M.D.;** Secretary, **W. A. Kitzler, M.D.**

Drs. R. J. Foley and **Alan Domina,** Tyndall, South Dakota, formed a professional partnership.

Dr. Domina has been associated with Dr. Foley in the Tyndall Clinic since July, when he, his wife and their two daughters moved to Tyndall from Lincoln, Nebraska, where he had completed his surgical residency at the Veterans Hospital.

Meanwhile, Drs. Foley and Domina announced that work is progressing on the new medical center immediately west of St. Michael's hospital and that they plan to move in this spring. The building will have facilities for three doctors.



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Mr. Richard C. Erickson
Executive Secretary
South Dakota State Medical Association
711 North Lake Avenue
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Dear Mr. Erickson:

Professor Carlson has handed me the check in the amount of $300 which represents the generous contribution of the South Dakota Medical Association for the support of the three science fairs in South Dakota. I want to thank you most sincerely on behalf of this institution and the Greater State Fund for your interest and financial assistance in connection with this very worthwhile program.

I will immediately transmit $100 to each of the other fairs together with a verifax copy of your letter. Again I thank you and all the members of the Medical Association. I would be pleased if you or any of the members of your Association could attend our Science Fair which will be held on March 20. I am sure you would be pleased with the effort and talent of the young people who participate.

Sincerely yours,

David F. Pearson
Assistant to the President

• • •

October 23, 1964

Dear Joe:

So here is how I cum to get sliced again! One day the man says "I don't like the looks of wot you coff out of your breath hole." So I says "So what?" So he says "We call in chest sturgeon." So I see him and he take x-ray pitchers like I am his last speciman. (I think by now I had so many x-rays maybe all my sperm cells is inactive — which might not be a bad idea at that.)

So anyhow the chest guy he don't like the pitchers so he stick a broncoscope down my neck puka and get so excited he cut off a bunch of samples from wherever he can see. So you guessed it — them samples is some maligerent or whatever you call it. Right away he say "More better we cut out leetle-a-bit you lung." I say "How much?" an right away he present his bill so I say "No dice."

"How big leetle-a-bit lung you want cut?" So now he say "Not much. Only top lobe left side — you still keep about ¾ of you blow." Now I think maybe, OK, I do, cause lots people many years say planty times "Kamaka, you a blow-hard" so maybe this fix. I say "OK, let's go."

You know what that son fa bitch do? He make cut start middle of back an all around shoulder blade and then in front — just like cut wing off Thanksgiving turkey. Only he no cut off wing. Next he, — and whole bunch fellows bully for strong, get thing call "rib spreader" an they spred and they spred till **all** (I think) get inside. Then they prowl around all day for 5 hours to cut out only ½ of 1 lung. Work by hour, I guess!

Next sew up all tite inside and out except punch 5-6 pukas for drain and all like that. Now all fix and Kamaka only ¾ blow-hard — maybe only ½. Hurt too much — I no blow good yet. Now I home, get go fine. Sorry no news — nothing ever happen aroun here. Ag she feel good too.

Aloha nui oe,

Ben

P.S. Chest sturgeon say he cut all out da kine maligerant stuff so no more trouble. Alla same I make big resolution I no fool around no more da cancer stuff. I quit! I figure fella fool dat stuff too much pretty soon he get kill for sure — I no want! !

Hawaii Medical Journal
Vol. 24, No. 2, November-December 1964, p. 98.



The Doctor's Visit, Jan Steen 1626-1679, Mauritshuis, The Hague

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1. Welch, C. E., Diverticula of the Alimentary Tract, in Conn, H. (editor): Current Therapy—1961, Philadelphia, W. B. Saunders Company, 1961, pp. 224-225.

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*A.M.A. Council on Drugs: J.A.M.A.183:469 (Feb. 9) 1963.

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Dosage: Adults—250 mg. every six hours in respiratory infections; 500 mg. every six hours in urinary and gastrointestinal infections (higher doses may be needed in severe infections). Children—(under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci and other penicillinase-producing organisms. *Aerobacter aerogenes*, *Pseudomonas pyocyanea*, and *Proteus morganii* are resistant to PENBRITIN (ampicillin).

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606—Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

References: 1. Rolinson, G. N., and Stevens, S.: Brit. M. J. *ii*:191 (July 22) 1961. 2. Editorial. Lancet *ii*:723 (Oct. 5) 1963. 3. Parker, M. T., *et al.*: Brit. M. J. *i*:1550, 1962. 4. Evans, W., and Hansman, D.: Lancet *i*:451 (Feb. 23) 1963. 5. Richards, J. D. M., and Rycroft, J. A.: Lancet *i*:553 (March 9) 1963. 6. Schaedler, R. W., *et al.*: New England J. Med. *270*:127 (Jan. 16) 1964. 7. Howard, P., and Riley, H. D., Jr.: Abstracts, Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, Oct. 26-28, 1964, New York, N.Y.

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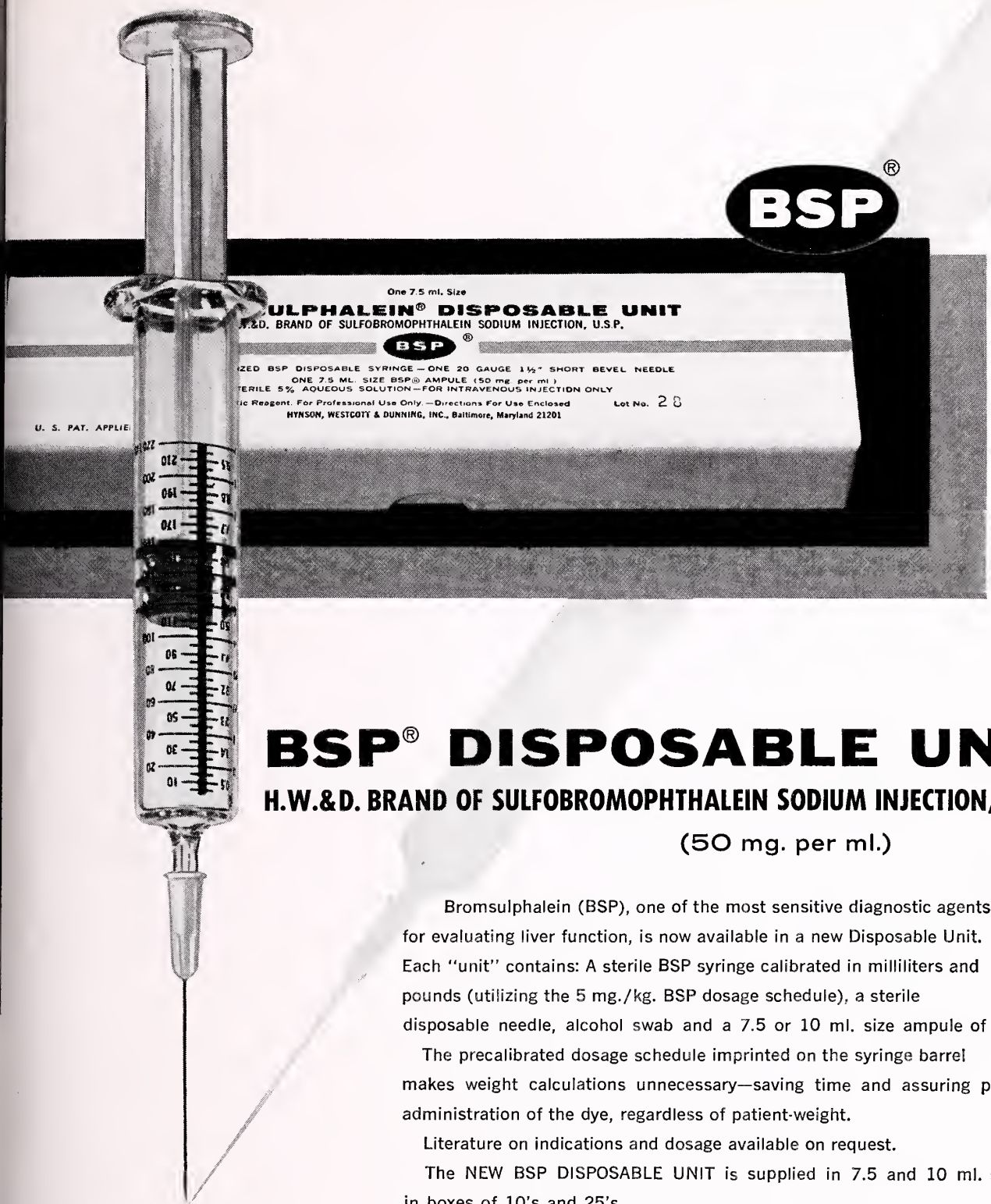
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Entered as second-class matter January 22, 1948 at the post office at Sioux Falls, South Dakota under the act of August 24, 1912

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Side Effects: Glossitis and allergic reactions, as well as severe anaphylactoid reactions, have been reported as rare side effects. Should significant reaction or idiosyncrasy occur, discontinue medication and institute countermeasures. Use of tetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of developing teeth. Reduce usual oral dosage and consider serum level determinations in patients with impaired renal function to prevent possible liver toxicity due to excessive accumulation of antibiotic in the serum.

Precautions: Overgrowth of nonsusceptible organisms may occur. In such cases, discontinue medication and institute appropriate specific therapy as indicated by susceptibility testing. Aluminum hydroxide gel given with antibiotics has been shown to decrease their absorption and is contraindicated. The coloring agents used in Signemycin Syrup and Pediatric Drops may produce red discoloration of stools.

Triacetyloleandomycin, a constituent of Signemycin, administered to adults in daily oral doses of 1.0 Gm. (3 Gm. Signemycin) for periods of more than ten days may produce hepatic dysfunction and jaundice. In the rare patient who requires this high dosage level of Signemycin initially, liver function should be carefully followed and dosage should be reduced, as promptly as possible, to the usual recommended range of 1.0 to 2.0 Gm. per day. Therefore, Signemycin is recommended primarily for the treatment of acute or severe infections, with treatment restricted to a ten-day period. If clinical judgment dictates continuation of therapy beyond ten days, serial monitoring of the liver profile should be carried out, including BSP, transaminase, and cephalin flocculation tests. Changes observed in liver function were reversible following discontinuation of the drug.

Formulas: Capsules: 250 mg. Signemycin (167 mg. tetracycline HCl and 83 mg. oleandomycin as triacetyloleandomycin).

Capsules: 125 mg. Signemycin (83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin).

Syrup: 125 mg. Signemycin (tetracycline equivalent to 83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin) per 5 cc.

Pediatric Drops: 100 mg. Signemycin (tetracycline equivalent to 67 mg. tetracycline HCl and 33 mg. oleandomycin as triacetyloleandomycin) per cc.

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Of 5,057 patients with confirmed infections of all body systems... 4,731 or 93.5% were treated successfully with Signemycin®

Note:

The high rate of response to Signemycin in these cases is noteworthy because the totals include many patients with difficult-to-treat infections, many whose infections had proved resistant to other agents, and many who had been treatment failures on other therapy.[1-87] In addition the following criteria were used for the cases cited: (1) only published results were used (2) results were confirmed by clinical and/or laboratory findings (3) patients were cured, not "improved" (4) dosage conformed with current recommendations in the United States (5) no other anti-infective agents were used concomitantly (6) no instance of prophylactic use was included in these tabulations.

Condition	No. of Patients	No. Responded To Signemycin
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

consistently effective...often when others fail

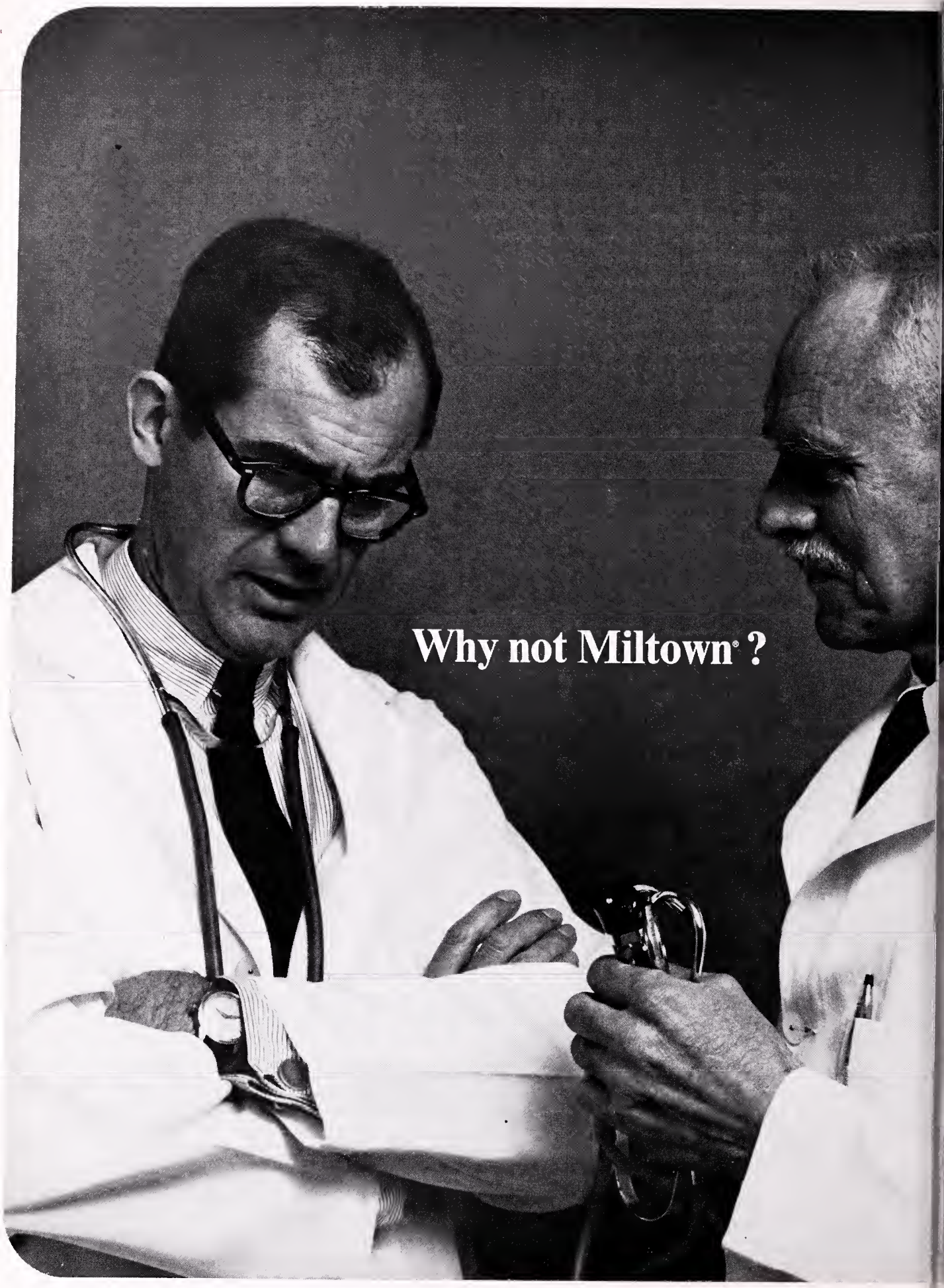
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tetracycline HCl, 167 mg.; oleandomycin as triacetyloleandomycin, 83 mg. capsules (250 mg.)

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■ **Clinicians throughout the world consider meprobamate a therapeutic standard in the management of anxiety and tension.**

■ **The high safety-efficacy ratio of 'Miltown' has been demonstrated by more than a decade of clinical use.**

Indications: 'Miltown' (meprobamate) is effective in relief of anxiety and tension states. Also as adjunctive therapy when anxiety may be a causative or otherwise disturbing factor. Although not a hypnotic, 'Miltown' fosters normal sleep through both its anti-anxiety and muscle-relaxant properties.

Contraindications: Previous allergic or idiosyncratic reactions to meprobamate or meprobamate-containing drugs.

Precautions: Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Usual adult dosage: One or two 400 mg. tablets three times daily. Doses above 2400 mg. daily are not recommended.

Supplied: In two strengths: 400 mg. scored tablets and 200 mg. coated tablets.

Before prescribing, consult package circular.

Miltown® (meprobamate)

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Could be. My problem hypertensive finally came around.



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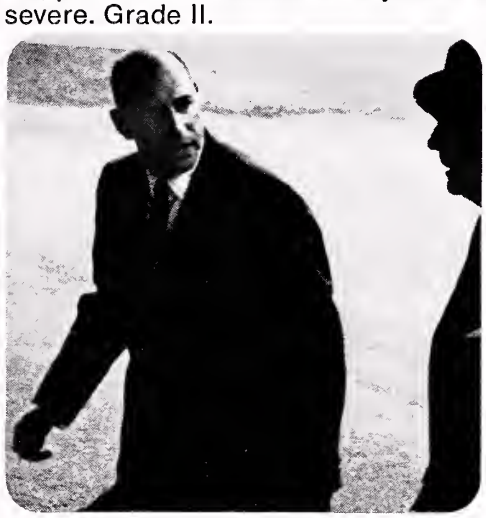
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Composition: Each tablet contains chlorthalidone, 50 mg., and reserpine, 0.25 mg.
Contraindications: History of mental depression, hypersensitivity, and most cases of severe renal or hepatic diseases.
Warning: Discontinue 2 weeks before general anesthesia, 1 week before electroshock therapy, and if depression or peptic ulcer occurs.
Precautions: Reduce dosage of concomitant antihypertensive agents by one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take particular care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended. Use with caution in patients with ulcerative colitis, gallstones, or bronchial asthma.
Side Effects: Nausea, vomiting, diarrhea, muscle cramps, headaches and dizziness. Potential side effects include angina pectoris, anxiety, depression, drowsiness, hyperglycemia, hyperuricemia, lassitude, leukopenia, nasal stuffiness, nightmare, purpura, urticaria, and weakness.
For full details, see the complete prescribing information.

Average Dosage: One tablet daily with breakfast.
Availability: Bottles of 100 and 1000 tablets.

*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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Side effects are possible but very rare: vesiculation, ulceration or necrosis at test site. Contraindications, none; but use with caution in active tuberculosis. *Available* as the new individually-capped unit, boxes of 5, or in cartons of 25.

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in maintenance therapy... a working analgesic for the active arthritic

ARTHRALGEN®

Each tablet contains:

Salicylamide	250 mg.
Acetaminophen	250 mg.
Ascorbic acid (Vitamin C)	25 mg.

a working analgesic for the active arthritic

—rapidly relieves early morning stiffness and arthritic pain. It promises a quicker response in most patients because its analgesic ingredients need no metabolic conversion before they act. As a combination of two prominent analgesic drugs, Arthralgen can often establish smoother, more complete pain relief because it synergistically produces more efficient analgesia on lower dosage levels of each.

two proven pain relievers

Arthralgen combines two better-tolerated, time-tested analgesics, acetaminophen and salicylamide, into a pharmacologically sound and therapeutically effective formulation. As Arthralgen, it penetrates tissues promptly and relieves pain rapidly with less likelihood of gastric irritation than aspirin.

sodium-free

Arthralgen contains no sodium. Therefore, it is often a safer and more suitable analgesic for use in the long-term treatments of arthritic patients who have other conditions which require sodium restriction.[1]

ARTHRALGEN®-PR (Arthralgen with prednisone)

Each tablet contains:

Salicylamide	250 mg.
Acetaminophen	250 mg.
Ascorbic acid (Vitamin C)	25 mg.
Prednisone	1 mg.

To help provide dosage flexibility in patients who require steroids, the basic Arthralgen formula is also available combined with prednisone as Arthralgen-PR. Prednisone is favored as the more advantageous steroid for use in Arthralgen-PR because it shows less tendency toward sodium retention, potassium excretion, and steroid-induced hypertension than that which often accompanies the use of cortisone and ACTH.[2]

A. H. ROBINS COMPANY, INCORPORATED/RICHMOND, VIRGINIA

BRIEF SUMMARY

Arthralgen and Arthralgen-PR are indicated in the management of rheumatoid arthritis, acute gouty arthritis, rheumatoid spondylitis, osteoarthritis, bursitis, fibrositis, and neuritis. Arthralgen may be used for analgesia in colds, flu, and various myalgias.

DOSAGE: One or two tablets four times a day. After remission of symptoms dosage should be reduced to the minimum maintenance level.

SIDE EFFECTS: Nausea, GI upset, or mild salicylism may rarely occur. Symptoms of hypercorticoidism dictate reduction of dosage of Arthralgen-PR.

PRECAUTION: Reduction in dosage of Arthralgen-PR given over a long period should be gradual, never abrupt.

CONTRAINDICATIONS: Hypersensitivity to any ingredient.

As with any drug containing prednisone, Arthralgen-PR is contraindicated, or should be administered only with care, to patients with peptic ulcer, tuberculosis, nephritis, diabetes mellitus, acute psychoses, Cushing's syndrome (or Cushing's disease), overwhelming spreading (systemic) infection, or predisposition to thrombophlebitis.

Arthralgen-PR is generally contraindicated in patients with uremia and viral infections, including poliomyelitis, vaccinia, ocular herpes simplex, and fungus infections of the eye. It is also contraindicated in patients with chicken pox or susceptible persons exposed to it.

SUPPLY: Arthralgen (white, scored) and Arthralgen-PR (yellow, scored) tablets are available in bottles of 100 and 500.

REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953. 2. Cohen, et al.: J.A.M.A., 165:225, 1957.

Stelazine® brand of trifluoperazine will calm your anxious working patient—with little or no drowsiness

When anxiety interferes with work, your patient needs a drug that will calm without causing undue drowsiness. With Stelazine (trifluoperazine, SK&F), you can promptly control the anxiety without producing the sedation seen with certain other agents. Anxious patients can remain active during therapy.



Stoll[1] used the drug in 50 patients with anxiety, and noted: "There was no drowsiness in this group of patients and, because of their alertness and less impaired concentration, they were able to continue with and, in some cases, return to their daily work."

Stelazine (trifluoperazine, SK&F) produces a fast therapeutic response—often within 24 to 48 hours. The convenient b.i.d. regimen frees patients from the need for a midday dose.

Principal side effects, usually dose-related, may include mild skin reaction, dry mouth, insomnia, fatigue, drowsiness, dizziness, amenorrhea and neuromuscular (extrapyramidal) reactions. Muscular weakness, anorexia, rash, lactation and blurred vision may also be observed. Blood dyscrasias and jaundice have been rare. Use with caution in patients with impaired cardiovascular systems. *Contraindicated* in comatose or greatly depressed states due to CNS depressants and in cases of existing blood dyscrasias, bone marrow depression and pre-existing liver damage.

Before prescribing, see SK&F Product Prescribing Information.

Photograph professionally posed.

1. Stoll, L. J.: The Use of Trifluoperazine ['Stelazine'] in General Practice, M. Press 243:578 (June 29) 1960.

Smith Kline & French Laboratories, Philadelphia



"All Registered Nurses are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests; they all have to measure up to the same standards. Therefore, all registered nurses are alike.

That's nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

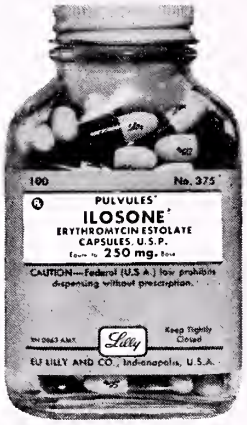
Bayer's standards are far more demanding. In fact, there are at least *nine specific differences* involving purity, potency and speed of tablet disintegration. These Bayer® standards result in significant product benefits including gentleness to the stomach, and product stability that enables Bayer tablets to *stay* strong and gentle until they are taken.

So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all registered nurses aren't alike, either.



An added margin





to meet an extra challenge

Test-tube activity of a drug is only one indication of its effectiveness. More important is the amount of antibacterial activity at the site of infection.

Ilosone® produces peak levels of antibacterial activity *two* to *four* times those of other erythromycin preparations. Furthermore, it attains them earlier and maintains them longer.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Even though Ilosone is the most active oral form of erythromycin, the incidence of side-effects is low. Infrequent cases of drug idiosyncrasy, manifested by a form of intrahepatic cholestatic jaundice, have been reported. There have been no known fatal or definite residual effects. Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of patients as a result of a local stimulating action of Ilosone on the alimentary tract. Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Dosage: *Children under 25 pounds*—5 mg. per pound of body weight every six hours. *Children 25 to 50 pounds*—125 mg. every six hours. *Adults and children over 50 pounds*—250 mg. every six hours. For severe infections, these dosages may be doubled.

Available in Pulvules®, suspension, drops, and chewable tablets. Ilosone Chewable tablets should be chewed or crushed and swallowed with water.

Ilosone®

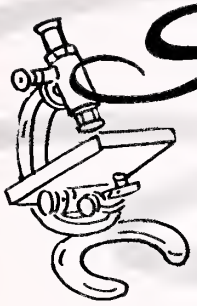
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Scientific PAPER

II. Intravenous Pitocin Infusion*

Quantitative Evaluation of Pitocin Used in a Semiphysiologic Manner to Induce Labor or to Treat Uterine Inertia.

Brooks Ranney, M.D.[1]

INTRODUCTION AND METHODS

Among 2,300 private obstetric patients, dilute, semiphysiologic pitocin infusion has been used to induce 142 labors, and to stimulate efficient contractions of the uterus during 201 inertia labors. The method is neither elaborate nor complicated, but stresses safety, simplicity, clinical judgment, and meticulous observations. In 1957 the initial report of 85 induced labors and 85 stimulated inertias contained this description [10]:

> "Each patient is evaluated individually by obstetric examination. If it is judged that her myometrium will respond to a dilute solution of pitocin an initial dose of 2 minims (0.123 ml.) is placed in 1 liter of 5% glucose in water, making a concentration of 1:8097. If examination indicates that the initial dose should be more concentrated, 3 minims (0.185 ml.) are placed in 1 liter of 5% glucose in water, making a concentration of 1:5405.
>
> This solution is started slowly, intravenously, while the attendant places his finger tips on the patient's abdomen over the fundus.
>
> The speed of intravenous pitocin infusion is titrated against the patient's myometrial response. No specific speed of flow is dictated, and no arbitrary limits are set. Some individuals respond differently from others. The intravenous pitocin infusion is dripped fast enough to produce a firm uterine contraction every 3 to 5 minutes, each lasting 30 to 45 seconds, yet slow enough to allow myometrial relaxation between contractions, and slow enough to avoid any signs of fetal distress."

* Presented before the District VI Meeting of The American College of Obstetricians and Gynecologists, at Fargo, North Dakota, November 17, 1961.

1. From the Departments of Obstetrics and Gynecology of the University of South Dakota School of Medicine, and the Yankton Clinic, Yankton, South Dakota.

Just prior to this initial report we started accumulating **quantitative** statistics to determine **exactly how much pitocin** was used by each patient between the start of infusion and the delivery of the baby. This study includes all who received pitocin prior to delivery, among 1,200 private patients delivered between April 1957 and November 1, 1961. 57 patients had induced labors. Uterine inertia in 116 patients was treated with dilute pitocin infusion.

CALCULATIONS, RESULTS, AND COMMENTS:

The minim is the smallest measure on the average syringe. Therefore, it serves as a practical method of emphasizing the diminutive. As such we continue to use it. Subsequent figures can be converted from minims to milliliters or "units" of pitocin by using the following table.

Figure 1

1 minim	= 0.0616 ml.	= 0.6 unit
2 minims	= 0.1232 ml.	= 1.2 units
3 minims	= 0.1848 ml.	= 1.8 units

In all instances commercially available Pitocin*, containing 10 units per cc., was used.

Since we knew how many minims of pitocin were placed in 1,000 ml. of fluids, and could easily measure the milliliters of fluid used prior to delivery, it was a simple problem to calculate the amount of pitocin actually infused.

1. General:

57 induced patients received an average of 1.74 minims of pitocin prior to delivery (Figure 2). The range was wide, varying from a tiny 0.12 minim up to 6.0 minims. However, only 9 patients required more than the original flask of 1,000 ml. containing either 2 or 3 minims of pitocin.

Figure 2

	Number of Patients	Minims of Pitocin used		
		High	Low	Average
Induced labors	57	6.0	0.12	1.74
Inertia labors	116	6.0	0.04	0.68

116 patients with uterine inertia only required an average of 0.68 minim of pitocin prior to delivery. Again the range of requirement was wide, varying from an infinitesimal 0.04 minim up to 6.0 minims. Only two patients required more than one flask, containing 3 minims.

The wide range of response not only reflects some difference in status of the cervix and uterus when infusion was started, but also emphasizes the marked difference in individual response to pitocin. For instance, the individual who delivered her baby after infusion of 0.04 minim of pitocin certainly would have responded with a spastic, dangerous uterine contraction had a stronger solution or a more rapid rate of infusion been used.

2. Parity:

FIGURE 3

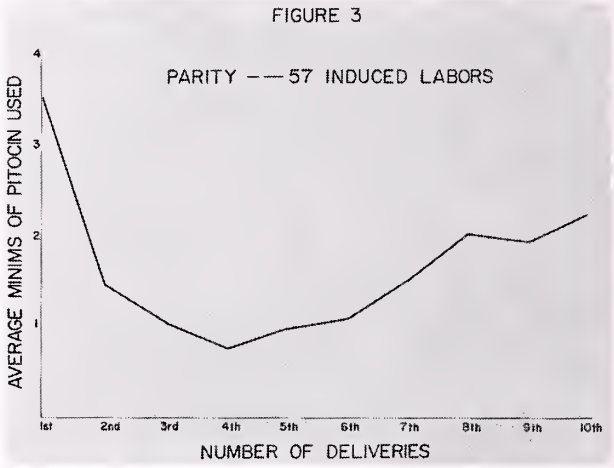


Figure 3 shows the average pitocin required to induce labor and delivery among women of respective parities. Clinically it has always been evident that a primigravida cervix opens most slowly. The graph not only corroborates this, but also shows that, thereafter, labor and delivery proceed more easily each successive time through the fourth parturition. However, the graph seems to indicate that labors subsequent to the fourth proceed with gradually increasing difficulty.

Figure 4 shows the average pitocin required to stimulate the uterus during inertia labors among women of respective parity. This graph is shaped in a somewhat similar curve, though lower than the preceding one. However, the most facile labors appear to terminate the fifth pregnancies, rather than the fourth.

Each successive labor and delivery probably interposes scar and fibrous tissue between muscle bundles of the myometrium. By the fourth or fifth pregnancy this may interfere with the efficiency of uterine contractions. Likewise, each successive pregnancy must add some degree of laceration and scarring in the lower uterine segment and cervix. Because this cumu-

*Parke-Davis Pharmaceutical Corporation.

FIGURE 4

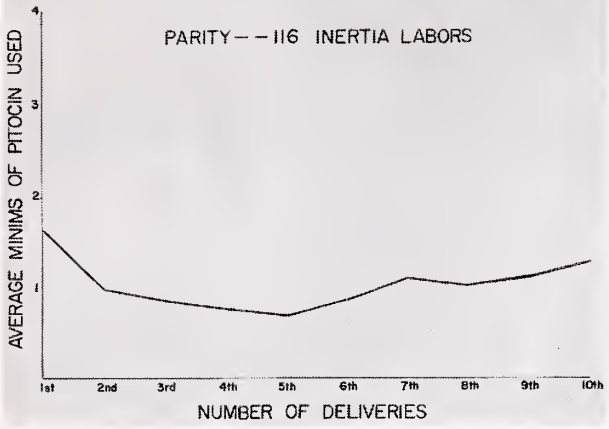


FIGURE 6

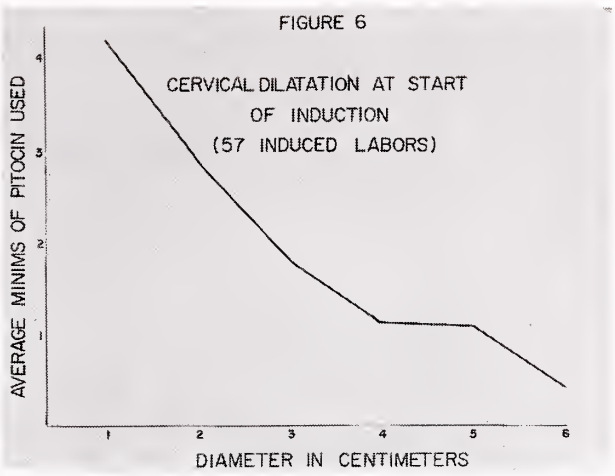


FIGURE 5

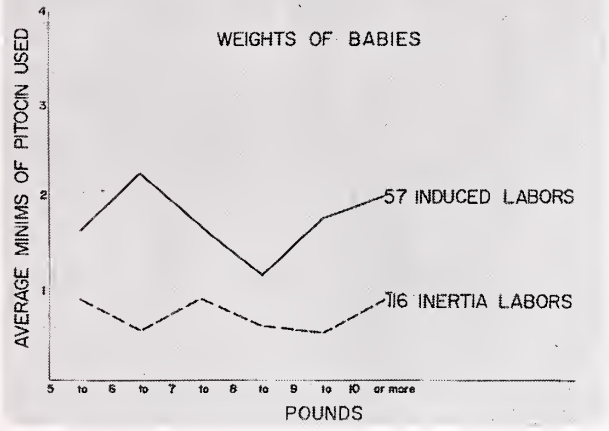
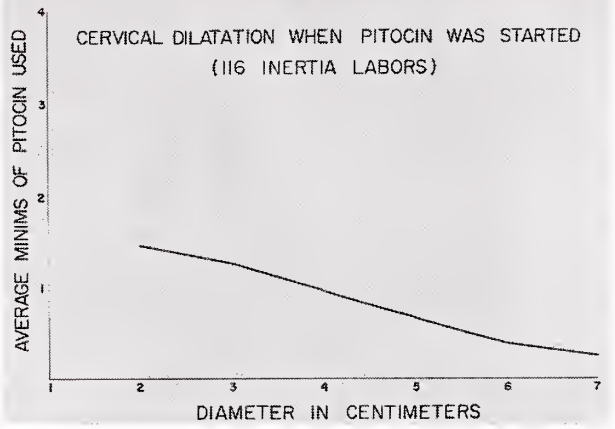


FIGURE 7



lative effect increases the danger of rupture, authorities[5, 7] warn that pitocin infusion should not be used in labors subsequent to the fourth or fifth. The larger amounts of pitocin needed to induce or stimulate labors subsequent to the fourth or fifth, lend credence to this warning.

3. Weight of Babies:

There was no discernible relationship between the weights of the babies and the average amounts of pitocin needed to complete either induced or inertia labors (Figure 5).

4. Cervical Dilatation:

One cannot statistically record the degree of firmness or softness of a cervix. Therefore, though we recognize the important effect of cervical effacement on the induction of labor and on progress in labor (and regularly utilize this factor in our clinical evaluations), we have not included effacement in our statistical evaluation of the uterine response to pitocin. Since cervical effacement and dilatation occur concomitantly, though not proportionally (effacement tending somewhat to precede dilatation), our figures and graphs showing the relationship of pitocin to cervical dilatation probably also reflect progress in effacement, to some degree.

Figure 6 shows that there is an inverse relationship between the amount of cervical dilatation, when pitocin was started to induce labor, and the amount of pitocin actually infused prior to delivery — the more dilatation at the start, the less pitocin required (as would be expected). Figure 7 shows a similar relationship at a lower dosage level required to stimulate inertia labors (which, likewise, agrees with clinical impressions).

5. Induced Labors and Cervical Dilatation:

A more detailed study of the 57 induced labors (Figure 8) reveals that the 26 designated as **indicated** inductions (because of other obstetric need for delivery) had less cervical dilatation at the time of induction and required more pitocin prior to delivery than did the 31 designated as **elective** inductions.

Figure 8

57 Inductions

		Range		
		High	Low	Average
Indicated 26	Dilatation at Induction	5 cm.	1 cm.	2.9 cm.
	Pitocin used	6.0 minims	0.3 minim	2.31 minims
	Parity	9	0	3.4
Elective 31	Dilatation at Induction	6 cm.	1 cm.	3.8 cm.
	Pitocin used	4.8 minims	0.05 minim	1.28 minims
	Parity	9	0	4.0

Figure 9

57 Inductions

Minims of Pitocin used from Induction until Delivery	Less than 1	1-2	2-3	3-4	4-5	5-6
26 **Indicated** Inductions	7	7	5	1	4	2
31 **Elective** Inductions	16	6	4	1	1	
Totals	23	13	9	2	5	2

Labor was induced in the elective group because cervices were well effaced and partially dilated (commonly referred to as "ripe"), because the uterus was "irritable," and because the patients lived a long distance from the hospital. Usually we have such patients enter the hospital the night before induction, and we have had some go into spontaneous labor during the night while awaiting induction the next morning, proving the accuracy of our clinical evaluations. The lesser pitocin required for the **elective group** probably also reflects the better effacement of their cervices at the time of induction. Indicated inductions were sometimes performed when cervices were not ideally effaced nor dilated.

It is worth noting that four labors were induced and carried through to delivery using only 0.05, 0.12, 0.2, and 0.3 minim of pitocin, respectively (Figure 9). Likewise, 23 labors were induced and completed using less than one minim of pitocin. All except 9 patients were delivered before 3 minims of pitocin were used. When uteri will respond physiologically to these dilute solutions (1:8097 or 1:5405) it hardly seems wise or necessary to use more concentrated solutions: i.e., 5 units (0.5 ml.; 8 minims) to 500 ml., or a concentration of pitocin of 1:1,000. The solutions reported herein, which are 5 to 8 times more dilute, seem safer and easier on maternal and fetal tissues and produce excellent results.

The two patients, among those **electively** induced, who required more than one flask of 1,000 ml. containing 3 minims pitocin to achieve delivery (Figure 9) represent failures in the clinical evaluation and choice of patients for elective induction of labor. These patients were not really ready for labor. Had they been ready, their uteri would have responded less grudgingly.

6. Rupture of the Membranes:

It is not possible statistically to evaluate the effect of rupture of the fetal membranes simply by comparing the average pitocin requirement of patients with intact membranes and the average pitocin requirement of patients with ruptured membranes, for several reasons. (1) Spontaneous rupture can occur at any time before or during labor, and the time factor is important. (2) The uteri of certain patients whose membranes rupture before labor are particularly refractory to stimulation. (3) In our hands artificial rupture of the membranes is not always used, but is sometimes used as an adjunct to pitocin infusion. The timing of artificial rupture varies with the progress of the patient and this variability is important. (4) Those patients who responded best to pitocin did not have artificial rupture of the membranes and needed the least pitocin; those who responded less satisfactorily to pitocin were subjected to amniotomy, but often required more pitocin. These natural and

Figure 11

Labors Induced by Pitocin Infusion

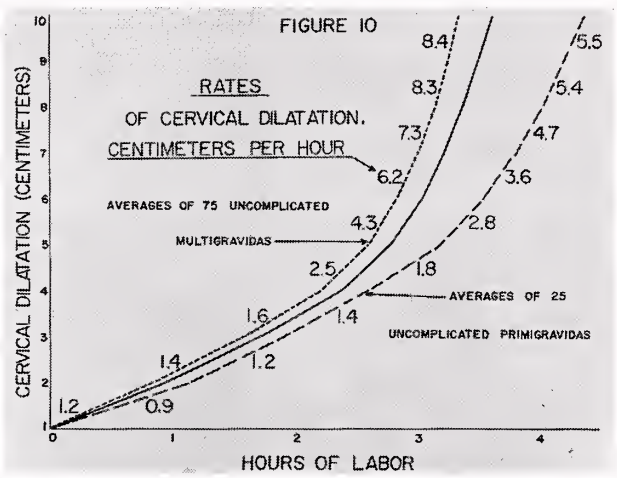
Group	Average **rate** of cervical dilatation (increase of the cervical diameter, measured in centimeters per hour):			
A. Membranes intact until delivery:				
1 Primigravida	Pitocin only:	3.1		
23 Multigravida	Pitocin only:	2.5		
B. Pitocin induction followed later by amniotomy:				
3 Primigravida	Pitocin only:	0.37	After amniotomy:	1.63
24 Multigravida	Pitocin only:	1.12	After amniotomy:	4.6
C. Spontaneous rupture of membranes at term, followed sometime later by pitocin induction:				
1 Primigravida	Before induction:	0	After pitocin:	0.8
5 Multigravida	Before induction:	0	After pitocin:	3.2

artificial selection factors make quantitative pitocin comparison illogical.

In order to evaluate the effects of rupture of the membranes it is necessary to establish a **measurable unit of function.** For this purpose we used the **rate of cervical dilatation,** calculated in **centimeters** of diameter **per hour.** Thus a rate of 1 indicates an increase of one centimeter of dilatation per hour; a rate of 3.2 indicates an average increase of three and two-tenths centimeters of cervical dilatation per hour of labor — and so on.

Dr. Caldeyro-Barcia[3] has described the **acceleration** in the **speed** of labor as labor progresses — as the cervix becomes more effaced and dilated. For controls, to determine the average rate of cervical dilatation per hour, for each successive hour of the first stage of labor, we obtained statistics from 100 of our private patients who had normal, uncomplicated labors. 25 were primigravida. 75 were multigravida. No membranes were ruptured artificially in these patients except at the time of delivery. The rates of dilatation shown on the graph (Figure 10) indicate the normal averages in our hands; there probably is a longer latent period of labor onset in primigravida than in multigravida (not shown in the graph).

Rates of cervical dilatation noted in Figure 11 (induced labors) and Figure 12 (stimulated inertia labors) may be compared with the control rates (Figure 10). While comparing **rates of dilatation** of the cervix it is important to remember that some of the rates will have been averaged over several hours and so will not produce a curve similar to that of a relatively physiologic labor, though the actual labor probably started slowly and accelerated later.



Induced Labors:

A. **Membranes intact until delivery:**

Figure 11-A shows the average rates of cervical dilatation in 23 multigravida and one primigravida in whom labor progressed well after pitocin induction with membranes intact. An average of 1.44 minims of pitocin was used during each of these labors.

B. **Pitocin induction followed later by amniotomy:**

Figure 11-B shows the average rates of cervical dilatation in pitocin-induced labors for 24 multigravida and 3 primigravida, respectively. In either instance, if the original rate of dilatation had continued, long labors would have resulted. Careful re-evaluation of each patient during sterile vaginal examination, followed immediately by amniotomy, caused better rates of cervical dilatation. It is our practice carefully to leak between 50 and 200 ml. of amniotic fluid out of the uterus at the time of

Figure 12

Uterine Inertia Stimulated with Pitocin Infusion

Group	Average **rate** of cervical dilatation (increase of the cervical diameter, measured in centimeters per hour):		
A. Membranes intact until delivery:			
3 Primigravida	Before pitocin: 0.33	After pitocin: 1.6	
40 Multigravida	Before pitocin: 0.69	After pitocin: 6.2	
B. Inertia; pitocin, amniotomy:			
1. 14 Primigravida	Before pitocin: 0.21	After pitocin: 1.3	After amniotomy: 1.5
2. 11 Multigravida	Before pitocin: 0.23	After pitocin: 2.3	After amniotomy: 5.8
3. 15 "Mixed"	Before pitocin: 0.56	Pitocin and amniotomy together: 3.6	
C. Spontaneous rupture of membranes; Uterine inertia; then pitocin:			
1. 6 Primigravida	Before pitocin: 0.25	After pitocin: 1.23	
2. 16 Multigravida	Before pitocin: 0.36	After pitocin: 3.3	
D. Inertia; Amniotomy with continued inertia; then pitocin			
7 "Mixed"	Before treatment: 0.6	After amniotomy: 0.9	After pitocin: 3.1

the amniotomy; this seems to make subsequent labor more efficient — perhaps by shortening myometrial musculature. Amniotomy was performed on these patients when the cervix was dilated an average of 5 cm., though the range was from 3 to 7 cm. The multigravida required an average of 1.77 minims of pitocin; the primigravida an average of 3.85 minims.

C. **Spontaneous rupture of membranes at term, followed sometime later by pitocin induction:**

The fact that rupture of the membranes does not always cause a term-pregnant uterus to labor is attested by the six induced labors listed in Figure 11-C. Likewise, those patients who finally start in labor a **long time** after spontaneous rupture of the membranes have uteri which respond poorly. The 4.8 minims of pitocin required for the primigravida and the average 1.97 minims of pitocin needed for the multigravida are more than our other figures for induced labor. Though this group is too small to be statistically significant, similar **extra** pitocin is needed to stimulate inertia labors in some instances where spontaneous rupture of the membranes occurs several hours prior to labor. It is evident that certain uteri are particularly refractory to labor, despite spontaneous or artificial rupture of the fetal membranes.

Uterine Inertia:

A. **Membranes intact until delivery:**

About half of the patients whose uteri display inertia (and who have no disproportion or other pathology) will respond to dilute pitocin infusion alone. Figure 12-A demonstrates the average response of 3 primigravida on one line, and the average response of 40 multigravida on another. Pitocin used for the primigravida averaged 1.0 minim; for the multigravida, 0.37 minim. After pitocin infusion was started the rate of cervical dilatation in the multigravida was similar to that of the normal control labors (Figure 10). In the primigravida, it was somewhat less. We try never to push a patient faster than the average normal.

B. **Inertia; pitocin, amniotomy:**

Figure 12-B contains 3 lines. Line No. 1 shows average rates of cervical dilatation for 14 primigravida whose uteri contracted poorly. Pitocin infusion improved contractions somewhat. Finally amniotomy was performed with only slight improvement among these primigravida.

Line No. 2 shows the averages for 11 multigravida with inertia, which are similar to Line No. 1 except for the more noticeable response both to pitocin and to subsequent amniotomy.

Line No. 3 shows a mixed group of 15 patients in whom pitocin infusion and amniotomy at the same time produced an excellent improvement in the average rate of cervical dilatation.

The procedures chosen in the treatment of uterine inertia depend on the clinical evaluation of the individual patient. One must avoid driving the fetal head like a pile-driver through the maternal pelvis!

C. **Spontaneous Rupture of Membranes; Uterine Inertia; Pitocin Infusion:**

Figure 12-C shows 2 lines. The membranes ruptured spontaneously prior to labor in 6 primigravida (Line No. 1). Poor labor, with an average rate of dilatation of 0.25, was modified by pitocin infusion to good labor with an average rate of dilatation of 1.23.

Line No. 2 shows a similar, but more obvious response to pitocin in 16 multigravida who had uterine inertia following spontaneously ruptured membranes prior to the onset of labor.

D. **Inertia; Amniotomy with Continued Inertia; Pitocin Infusion:**

A mixed group of 7 patients (Figure 12-D) were progressing slowly in labor. Amniotomy resulted in a slight increase in the average rate of cervical dilatation to 0.97, but pitocin infusion, started thereafter, increased the average rate of cervical dilatation to 3.1.

The last two groups show that there are some laggard uteri which do not respond well to rupture of the membranes, whether spontaneous or artificial, but which will almost always respond to pitocin infusion.

Figure 13

Rates of Infusion of Syntocin Considered **Physiologic** by Dr. Caldeyro-Barcia

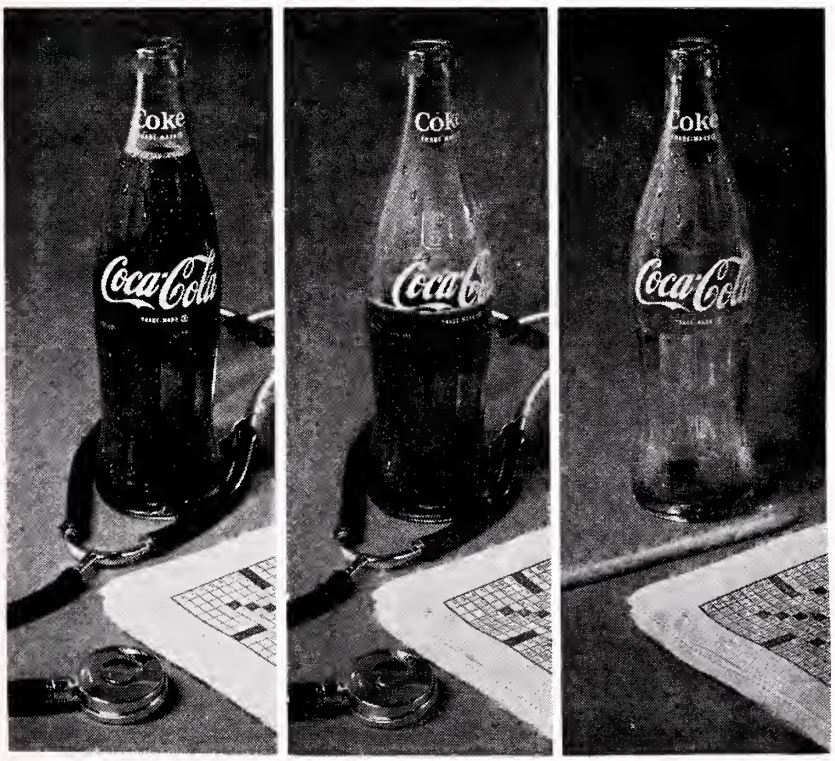
	Milliunits		
	Per minute	Per hour	Units per hour
High	8	480	.48
Low	1	60	.06

DISCUSSION:

1. **Rate of Infusion:**

Using an infusion pump, Dr. Caldeyro-Barcia[3] accurately controls the rate of infusion of synthetic oxytocin (Figure 13). He considers that the rates of 1 to 8 milliunits per minute will produce physiologic labor. These convert to rates of .06 to .48 unit per hour.

Figure 14 shows our average rates of infusion to be well within these limits. Actually, only four induced patients and one inertia patient received pitocin at rates higher than .48 unit per hour, and none of these received pitocin at the rate of .96 unit per hour or higher, which Dr. Caldeyro-Barcia states will produce uterine "tachystoly and hypertonicity."



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Figure 14

Rates of Infusion of Pitocin

		Minims per hour	Units per hour
57 Induced Patients	High	1.3	.80
	Average	.43	.26
	Low	.05	.03
116 Inertia Patients	High	1.0	.62
	Average	.28	.17
	Low	.04	.01

Conversely, 2 induced patients and 10 inertia patients received pitocin at rates below the .06 unit per hour considered to be the lowest physiologic level, yet the uteri of these 12 patients responded satisfactorily.

We agree generally with Dr. Caldeyro-Barcia's physiologic rates of infusion (1 to 8 milliunits per minute; .06 to .48 unit per hour; .09 to .72 minim per hour). However, there are occasional patients whose uteri are so insensitive as to require a slightly higher rate of infusion. Conversely, there are a number of patients whose uteri are so **highly sensitive** that they will respond readily to a considerably lesser rate of infusion. This latter group are the most **dangerous.** Because of them it is wise to use the very dilute solutions (2 or 3 minims of pitocin to 1,000 ml.) previously described.

2. **Maternal and Perinatal Health:**

In recent years the reduction in maternal deaths has not been so remarkable as formerly. There is a tendency to assume blandly that this leveling off of the maternal death rate has occurred because we have nearly reached a so-called "absolute minimum." Active members of maternal mortality study committees know that this is not so. Many maternal deaths, still occurring, are preventable.

Among common causes of maternal death are uterine rupture, postpartum hemorrhage, amniotic fluid embolism, "Obstetric shock," hypofibrinogenemia, and lower-nephron syndrome.[12] A growing body of evidence indicates that many of these obstetric complications are caused by the imprudent use of oxytocin.[1, 2, 4, 6, 8, 9, 11]

Likewise, we know that precipitate labors contribute to cerebral palsy and brain damage in the babies. All who use oxytocin have seen the sensitive patient respond to it very abruptly, causing spastic uterine contractions with poor relaxations between. One cannot estimate how much anoxia and cerebral pressure a specific baby can absorb before permanent damage is produced. Any labor faster or harder than the normal physiologic range cannot be good.

For the reasons given above, when one is using pitocin and/or amniotomy for the induction of labor or the stimulation of an inert uterus, the most careful judgment must be applied so that the resulting labor is physiologic, not precipitate or catastrophic.

Six years ago we had a close brush with catastrophe. The essential details are worth repeating:

Mrs. O. H., Gravida V, Para IV, age 39, entered the hospital, at term, in rapid labor. The last of her four previous babies weighed 9 pounds. None of her previous labors lasted more than 3 hours. Deliveries were spontaneous.

Uterine contractions were frequent and strong. The uterine cervix was 4 cm. dilated. After perineal preparation and enema the cervix was 7 cm. dilated. The patient was placed on the delivery table, prepared and draped. Then contractions stopped (as they sometimes do, so exasperatingly, in some multipara who have been laboring effectively in the labor room and have just been moved to the delivery room!)

After 10 minutes of waiting, without uterine contractions, amniotomy was performed. The fluid was meconium stained, so the patient was given oxygen, by mask, though fetal heart tones remained normal. During the next 15 minutes there were no effective uterine contractions. The patient was comfortable.

The patient was given **0.5 minim** of **pitocin, subcutaneously,** using a tuberculin syringe. Within 15 minutes the uterus contracted very strongly and frequently. A rather flaccid, 8 lb., 8 oz. baby boy was delivered rapidly, spontaneously. He breathed poorly, but responded well to tracheal catheter and oxygen.

Immediately after delivery of the placenta there was a trickle of blood from the vagina which was not stopped by intravenous ergotrate, though the uterus felt firm. Cervical examination revealed no laceration. Careful bimanual examination revealed no palpable laceration of the uterus. Bimanual massage did not control bleeding.

Blood was cross-matched and an operating room was prepared. The uterus, cervix, and vagina were packed, but almost as soon as this was completed blood was coming through the pack.

Transfusion was started, the patient was moved to surgery, and an abdominal total hysterectomy was performed as rapidly as possible. During surgery we could not obtain a blood pressure reading, but the pulse varied between 150 and 170 per minute. 3,500 ml. of blood during and immediately after surgery brought the blood pressure up to 140/90 and the pulse down to 120.

The serosal surface of the uterus appeared normal. However, there was a 7 cm. incomplete laceration extending about half way through the myometrium at the junction of the upper and lower segments on the left side. Likewise, there was a smaller laceration on the right side of the uterus.

Luckily, the patient responded well and she left the hospital on her eighth postoperative day with her apparently healthy baby, who has grown and developed normally since then.

We have not used subcutaneous or intramuscular pitocin prior to birth since that day.

Prior to delivery, pitocin should be used only in a manner which is directly controllable (intravenously), and only in a dilution which will not over-stimulate the highly sensitive patient (very dilute). Patients receiving dilute intravenous pitocin should be carefully watched and evaluated by a person who has adequate knowledge and experience concerning the physiology of labor.

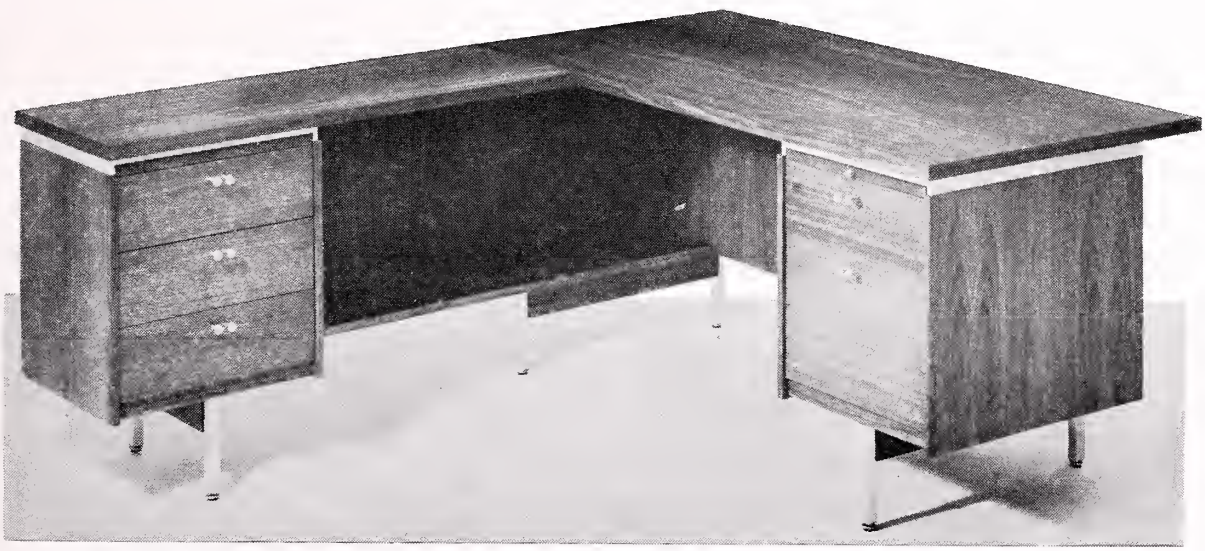
SUMMARY:

1. 57 patients had induced labors using very dilute intravenous pitocin. They received an average of 1.47 minims of pitocin prior to delivery.

2. The uterine contractions of 116 patients with uterine inertia were stimulated using an average of 0.68 minim of pitocin prior to delivery.

3. The least amount of pitocin used between start of infusion and delivery of the baby was an infinitesimal 0.04 minim.

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4. Apparently labors ending the fourth or fifth pregnancies are most easily induced or stimulated with pitocin.

5. There is an inverse relationship between the amount of cervical dilatation at the start of pitocin and the amount of pitocin used prior to delivery.

6. On the average, patients with **indicated** inductions of labor had less "ripe" cervices and required more pitocin than did those with **elective** inductions.

7. Amniotomy is quite often helpful in stimulating a uterus toward efficient labor. However, both spontaneous rupture of the membranes and amniotomy may be followed by no labor, or a very stubborn inertia. Amniotomy is not completely innocuous.

8. In general, rates of infusion of 1 to 8 milliunits per minute (.06 to .48 unit per hour; .09 to .72 minim per hour) of oxytocin will produce a physiologic labor response in a term-pregnant uterus. However, a very few patients are less sensitive, requiring more, and a number are more sensitive, responding to less than these amounts.

9. Some maternal deaths and perinatal deaths are caused by the imprudent use of oxytocin. Damage less than death is probably more common.

CONCLUSION:

"When Pitocin infusion is indicated for the induction of labor or treatment of uterine inertia, a very dilute solution will suffice, and its use must be balanced against the physiologic responses of the patient."[10]

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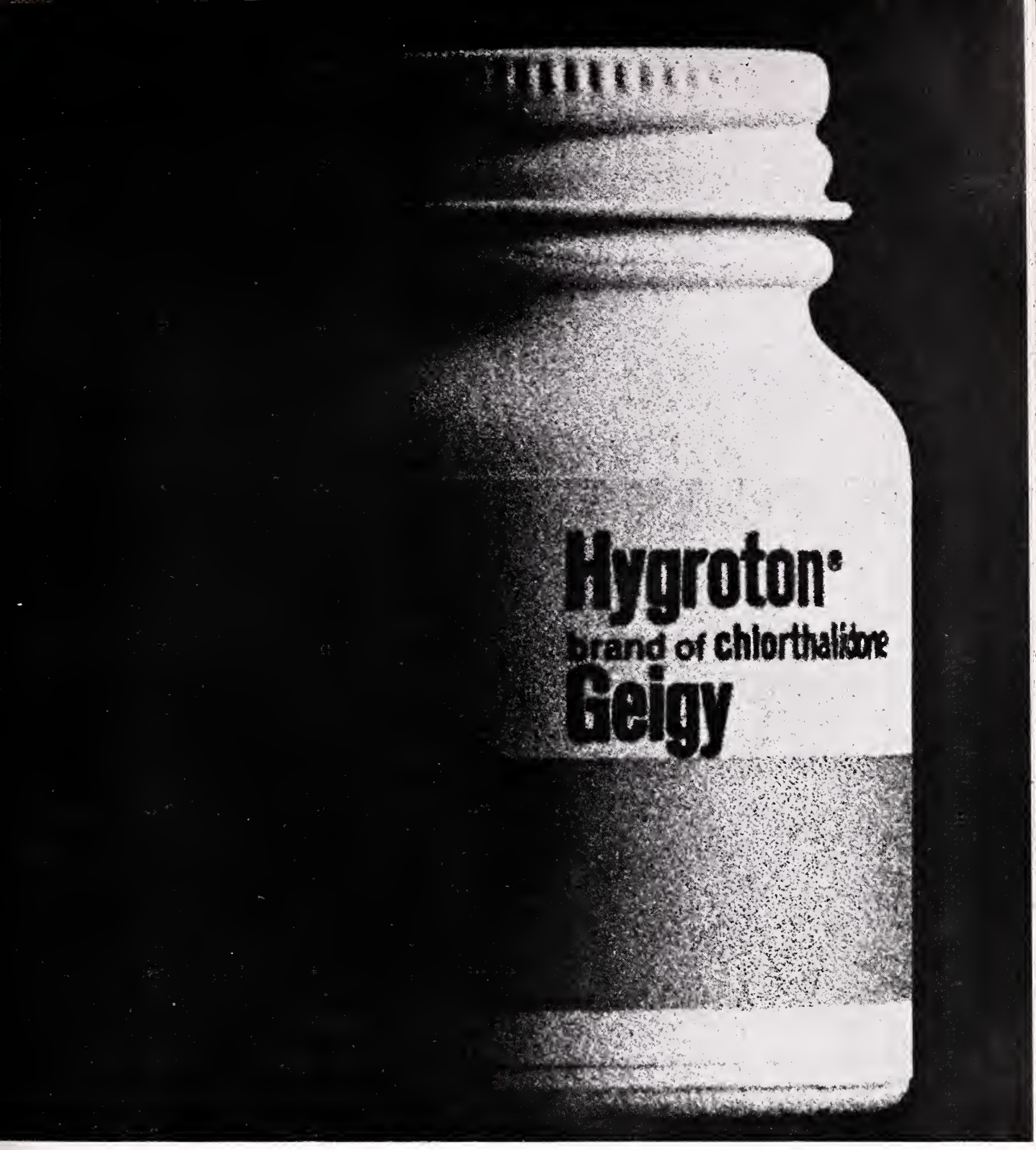
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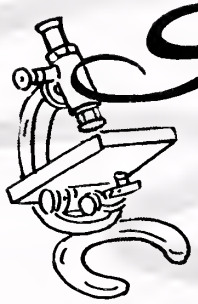
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Scientific PAPER

EXPERIENCES WITH TREATMENT OF ALCOHOLICS

By Carlos Mendoza, M.D.
Director Central S. D. M. H. Center,
Huron, South Dakota

If we speak of the treatment of alcoholics as a method of re-education, we have to admit that there is a place for every Therapist in the field of alcoholism. However what is of outstanding importance in the treatment of alcoholics is not the method used, but the realization that something is different with the alcoholic patient, and that there are some adjustments the Therapist has to overcome before he is able to apply himself to this field of endeavor.

The alcoholic patient is not only reluctant to take treatment, but he has more than the usual amount of resistance normally found in any psychiatric patient. By resistance it is meant, in the first place, all the attitudes and tricks that he uses to annoy the physician, when he comes voluntarily or involuntarily seeking help. Then, if the physician is not prepared, or is not used to this kind of patient, he generally "gets rid of the nuisance," the best he can, and the patient is left without the proper care, or he is regarded just as a "drunk" that will come again "to bother," sometime in the near future.

On the other hand, if the patient is "taken in" and finally treated, he will conform the therapy situation to his liking, and to his own rules, regardless of the circumstances and regardless of the consequences. For him, your training and organization means nothing, he has to be treated whenever he requests it, because he cannot take frustration, but he can give you plenty of it, and if you do not conform to his own selfish requirements you have become his enemy. In other words, this is a good friend if you succeed in taking him in, but is a bad enemy if you don't, no matter how much emotional investment you have to devote to him.

Furthermore, we all well know the common principle that nothing can be done for the alcoholic unless he accepts that he has a serious problem and a serious disease, and unless he recognizes that he needs treatment. How much of this could be put in different terms, how much of this could be put in the terms of the

physician's inability to make that little adjustment and treat the alcoholic in his own terms and conditions, we don't know. However we can say that this compromise is being found increasingly more often than ever before, and perhaps someday we could reach the conclusion that alcoholism and alcoholism treatment programs are a sort of a specialty within the other medical specialty that is called Psychiatry, particularly if we speak in medical terms. And I say, if we speak in medical terms, because the numerous people involved in this field are not only medical people, but belong to many other related fields.

I am referring to that group of workers of the AA organization, which have their own experiences from many years to count in this field. I am sure you have heard of their techniques, their success and failures and I am sure that you will agree with me that we have much to learn from them. First of all, in the matter of admitting that alcoholism is an illness, a concept already known 100 years ago, but a reality about which not much has been done, perhaps because it implies the acceptance of an illness that is mostly mental in nature.

Regarding the latest statement I would like again to ask the question, how much of this responsibility, for not including alcoholism in the common practice of medicine and psychiatry, belongs to the physician? Perhaps the best answer for this question is given by saying that it is not easy to deal with this kind of patient, and consequently at times we are not sure if the alcoholic is a sick person, or is just a drunk who may be better handled by the Police, at much less cost to the taxpayers, and to the physician's duties.

> In South Dakota however, by now we have, so to say, taken the bull by the horns. Thanks to the work of the Yankton State Hospital people, mainly Dr. Lawrence G. Behan and Mr. Lee Phillips, an amendment to the commitment law for the mentally sick has been submitted by the Legislative Research Council. This will include chronic alcoholism and drug addiction as a reason for commitment for a period no less than 90 days. If the law is passed I am sure that the problem of considering alcoholism as a disease will be solved and the nuisance will be well taken care of by the appropriate referral of the patient.

To illustrate this fact let me give you some examples of my own personal practice.

CASE NO. 1. A patient came to State Hospital with the label of emergency, mainly because he is unable to pay his $50.00 of admission and his relatives are so sick and tired of him that they don't think they can pay his hospitalization. The psychiatrist thinks he has to work with him at least one month to be able to motivate him to stay sober. However he has to discharge him in 5 days because under the law with a non-psychotic diagnosis he cannot recommend his commitment.

CASE NO. 2. The patient has been brought to the Hospital by well intended relatives and they have paid in advance for one month of voluntary hospitalization. However two days after admission, when the patient is more or less sober, he requests his discharge because he knows there is no law to hold him being non-psychotic and a voluntary case. So he goes back to drink and not only this, but he repeats the same trick over and over again, sometimes to great annoyance and distress of the psychiatrist.

CASE NO. 3. A patient had been seen by AA workers for the past couple of days in order to have him agree to seek treatment. He had been holding on until 3 A.M. when he finally agrees to come. An admission at this hour is unusual, more so if it is due to alcoholism.

CASE NO. 4. A young woman came to the Mental Health Center to see if she could

be helped but assures that her main difficulty is anxiety and psychosomatic symptoms and that she could not quit drinking because that was the only time when she felt well.

After a couple of interviews conducted to her own liking, she assures that when she drinks she is so disturbed that she sometimes is unable to control her hostility. A few days later I had a good demonstration of this woman's aggressive behavior when she calls me at home to tell me she was drunk because the pills I have prescribed were not working. A second call follows to tell me I was a "phony." Finally she comes to my door evidently with not the best intentions and I had a hard time to persuade her to leave and be sober.

And, in this fashion, I could relate you case after case that are nothing but a hard trial on the physician's ability to keep his equanimity and on the physician's ability to understand emotionally disturbed people, with low tolerance for frustration, and very poor judgment. Only if he succeeds he will be able to assume his duties of re-educational therapy of the suffering alcoholics and in many cases he is rewarded with the credit for their return to society. When they do so and remain sober, they are fine citizens, and in this respect I could also mention you many typical cases.

Going further into the interpretation of the treatment venture with alcoholics, I could tell you that they come with a handicap to the treatment situation. A handicap which is well known to the experienced Psychiatrist, a handicap that in some cases may never be overcome, or what is more serious may never be understood.

Methamphetamine inhalers — sold for the relief of nasal congestion — will be restricted to the prescription list in the future because of widespread abuse, the Food and Drug Administration, Department of Health, Education, and Welfare, has announced.

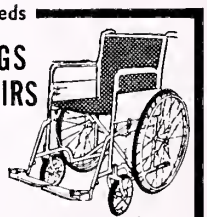
Food and Drug Commissioner George P. Larrick said the action is being taken because of increasing abuse of the products by persons who extract the active ingredient from the inhaler "wick" and use it for the amphetamine-like effect.

The announcement was made in a policy statement published in the Federal Register Wednesday, February 10, 1965. A previous policy statement published in February, 1959, placed similar inhalers containing amphetamine on the prescription list because of widespread abuse.

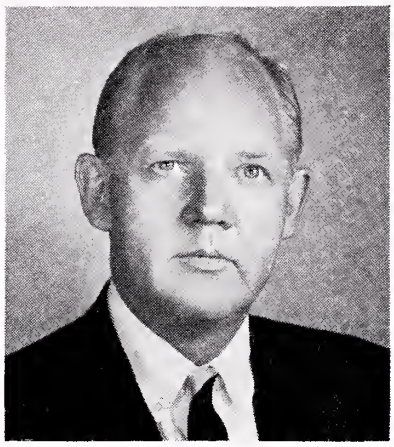
Mr. Larrick said that in 1959, however, only six users of methamphetamine were reported to FDA. He said that five were reported each year afterwards through 1962 when the figure jumped to 54 in 1963 and 153 in 1964. Reports of misuse, he said, have come from Colorado, Illinois, Iowa, Kentucky, Kansas, Missouri, Nebraska, Oklahoma, Texas and Indiana.

Mr. Larrick noted that amphetamine tablets are sold legally by prescription only but that there is a widespread bootleg traffic in them. He said they contribute to highway accidents, to broken homes and to juvenile delinquency. Methamphetamine extracted from inhalers can produce the same results, he said.

NEEDED — General Physician—Family Internist by four-man group in growing rural program in West Virginia. Modern clinic facilities, regularly visiting specialist consultant staff, scheduled training and vacation periods, foundation sponsorship, no investment required. Starting net income range $14,000-$18,000 depending on qualifications. Box A3, S. D. Journal of Medicine, 711 N. Lake Ave., Sioux Falls, S. D.

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PRESIDENT'S PAGE



Dear Fellow Members,

From reports put out by the Communicable Disease Control office of the U. S. Public Health Service it is very apparent that the physicians in South Dakota, as well as those everywhere else in the country, are not living up to their legal and moral responsibilities in reporting communicable disease and in particular syphilis.

I'm sure we all thought that venereal disease was conquered and would **no** longer be a problem after the strenuous VD campaigns of world war **II** but in fact since 1955 there has been a very alarming upsurge in the amount of venereal disease encountered. In the last ten years there have been at least 120,000 cases of syphilis reported each year and it is thought that at least that many are unreported.

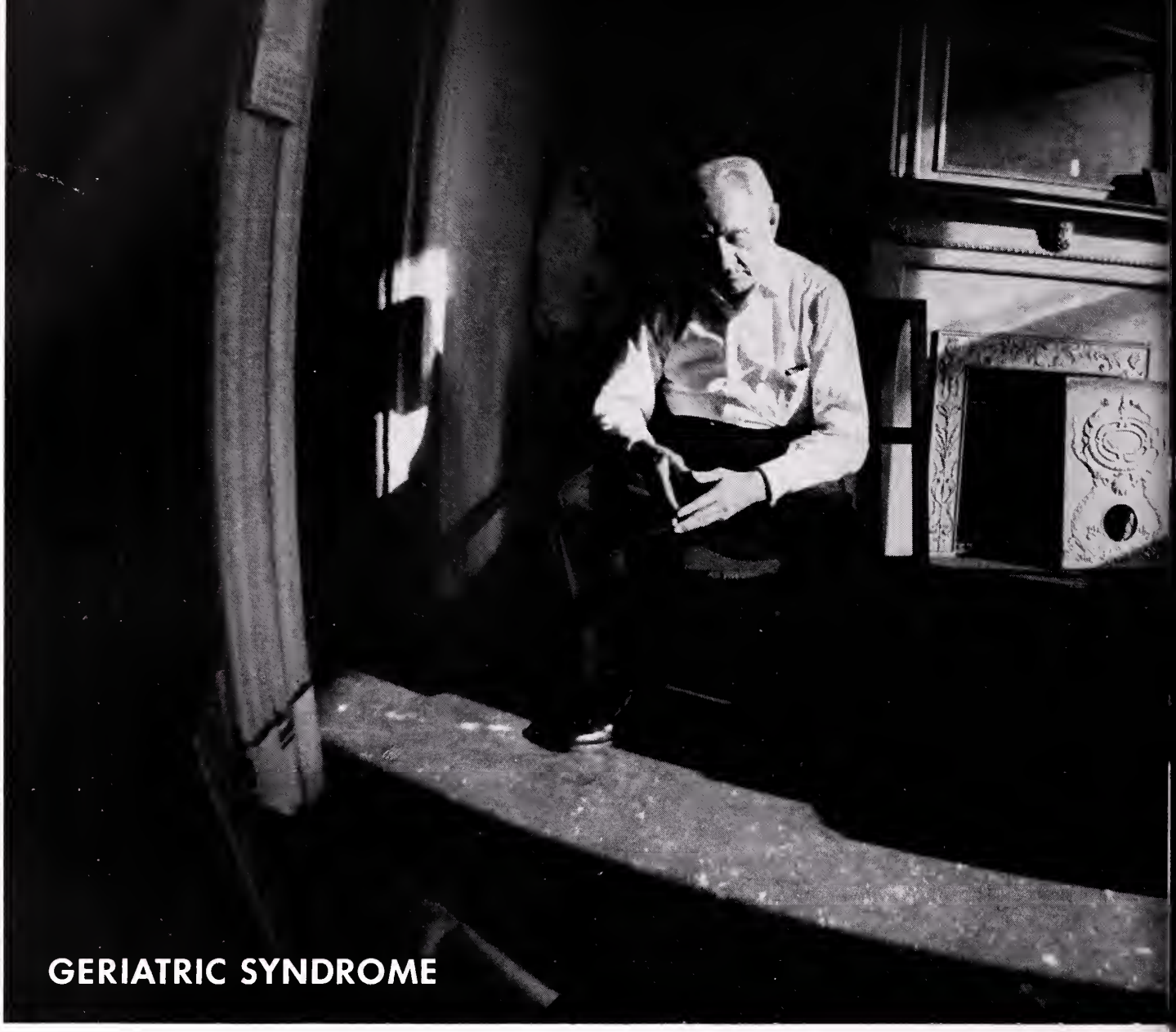
The problem becomes apparent when one realizes that every one hundred persons treated after they are no longer infectious have already passed the disease on to a hundred and fifteen additional persons.

While it is always an unpleasant duty to report one of your well paying patients for a disease that is not considered exactly socially acceptable we also have a very distinct duty to our other patients and those of our friends. That duty can only be resolved by reporting the cases and allowing the proper officials to track down the contacts, test them and treat them where necessary. We must explain to these people that there is no law against this disease, that there is no punishment either by pocketbook or incarceration and that our sole interest in reporting this disease and tracing contacts is in preventing the spread of a very serious and potentially fatal disease.

If we are to eradicate or even begin to control syphilis we must do a more conscientious and efficient job in reporting and treating lesions than we have in the last ten years.

May we have your cooperation.

Fraternally yours,
James P. Steele, M.D.
President



when a change in environment overwhelms him with anxiety

Failing health, financial difficulties, or the death of a spouse are among the reasons why elderly people may be obliged to leave their familiar surroundings. Moving in with children or entering a home for the aged may satisfy practical requirements but can be psychologically traumatic since emotional resilience tends to diminish with age.

Even when anxiety reaches overwhelming proportions, you can counteract it promptly with the potent tranquilizer—Atarax (hydroxyzine HCl).

The outstanding systemic safety record of Atarax makes it particularly suitable for geriatric patients whose drug tolerance is often low. The usual initial dosage in such patients is 50 mg. q.i.d. However, this tranquilizer is so well tolerated that dosage can be adjusted to meet individual requirements. The wide variety of dosage forms allows flexibility of administration from any standpoint—convenience, patient preference, or emergency requirements.

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Side effects and precautions: The transitary drowsiness which may accur with hydroxyzine HCl usually disappears spontaneously in a few days with continued therapy, or is correctable by dosage reductian. Dryness of the mouth may be seen with higher dases. Invaluntory mator activity has been reparted in hospitalized patients on higher than recammended dases. Hydroxyzine HCl may potentiate CNS depressants, narcotics such as meperidine, barbiturotes, and anticaagulants. In conjunctive use, dosage far these drugs shauld be decreased. Because drowsiness may occur, patients should be cautioned against driving a car or operating dangeraus machinery. **Parenteral Solution Precautions and contraindications:** This dosage form is intended anly for I.M. or I.V. odministrotion and should nat, under any circumstances, be injected subcutaneously or intraarteriolly. When the usual precautions far I.M. injection have been followed, reparts of soft tissue reactians have been rare. I.V. administratian should be slow, na faster than 25 mg. per minute, and should nat exceed 100 mg. in any single dose. Particular care should be used to insure injection anly into intact veins; a few instances of digital gangrene occurring distal to the injection site have been attributed to inadvertent intraarterial injectian ar periarterial extravasatian, both af which shauld be ovoided. **More detailed professional informatian available on request.**

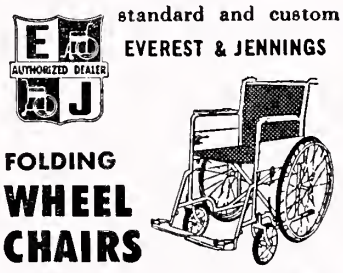
RICHARD THOMAS MAXWELL, M.D.

1910—1965

Richard T. Maxwell, M.D., Clear Lake, passed away at the age of 54.

Dr. Maxwell was born in New Rockford, North Dakota, March 27, 1910. He graduated from the New England, North Dakota High School and received his B.S. degree from North Dakota State University. He received his medical degree from the University of Colorado School of Medicine at Denver in 1935. He practiced medicine in Clear Lake for 26 years. Dr. Maxwell retired from practice last October.

He is survived by his widow, Ada L. and two sons, Howard H. and Donald M., all of Clear Lake.



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Dr. George W. Smith is pictured above receiving the "Outstanding Physician Award" from Governor Nils Boe.

Pop's Proverbs

Rationalization is the justification for doing what you wanted to do in the first place.

NEWS NOTES

Dr. Donald McIlrath of the Mayo Clinic Surgical Staff addressed the meeting of the South Dakota Chapter of the American College of Surgeons at their fifteenth annual meeting at Huron, South Dakota on February 20th.

South Dakota Mother of the Year is **Mrs. C. Rodney Stoltz,** wife of a Watertown surgeon. Mrs. Stoltz will represent South Dakota in the national competition in New York in May. She was national president of the American Medical Association Auxiliary, has been active in education, including a school board member at Watertown since 1957, and is active in Methodist Church work.

* * *

Will E. Donahoe, M.D., Sioux Falls, will attend the Spring meeting of the Northwest Pediatrics Society at the Mayo Clinic in Rochester, Minnesota on March 31, 1965.

* * *

Lawrence E. Savage, M.D., has joined the Yankton Clinic staff as general surgeon. He is also a new staff member at the Sacred Heart Hospital.

Dr. Donald Destache, a former Aberdeen general practitioner, has returned to the City as an Anesthesiologist and will be supervising Anesthesiology at St. Luke's Hospital. Dr. Destache took his residency in Anesthesiology at the University of Minnesota.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

The Twelfth District Medical Society held their annual election of officers. The officers are as follows: President, **Joseph Kass, M.D.,** Rosholt; Secretary-Treasurer, **Ruth Czajkowskyj, M.D.,** Veblen; Delegate to state Convention, **D. Lee, M.D.,** Webster; Alternate Delegate, **H. Brauer, M.D.,** Sisseton.

James P. Steele, M.D., President of the South Dakota State Medical Association made a visit to the District Meeting. **Jerome Eckrich, M.D.,** Aberdeen, was the guest speaker and his topic was, "Hypernephroma."

* * *

A three-day course directed to the surgically oriented physician will be held at the University of Wisconsin's Medical Center August 26, 27, 28, 1965.

Aspects of newer measures in cardiovascular surgery, biliary tract surgery, general abdominal surgery as well as other ongoing developments will be presented. The program will have four academic sessions and three free intervals for reflection and discussion. Complete information may be obtained from Paul Knipping, 401 Extension Bldg., University of Wisconsin, Madison, Wisconsin 53706.

* * *

The Second National Symposium On Coccidioidomycosis will be held on December 8, 9, 10, 1965 at Del E. Webb TowneHouse, Phoenix, Arizona. For further information contact: Arizona Tuberculosis and Health Association, Inc., 733 West McDowell Road, Phoenix, Arizona 85007.

The Third District Medical Society held their meeting in Madison on February 11th. **Dr.** (Professor) **George Garrigan** presented a slide illustrated lecture on his experiences in Africa. The next regular meeting is to be held in Arlington on April 8th with **Dr. Scheller** in charge.

* * *

This year a new diversified program of post-graduate seminars has been issued by the American Medical Society of Vienna in connection with the Medical Faculty of the University of Vienna. Dr. M. A. Kline, the President of the Society, reports an extended schedule of seminars in all medical specialties and subspecialties and the availability of top medical scientists of the University Clinics.

Further information may be obtained by writing to the Secretary of the American Medical Society of Vienna, Universitaetsstrasse 11, Vienna 1, Austria.

* * *

The Part II (Oral and Clinical) examinations of the American Board of Obstetrics and Gynecology for all scheduled candidates will be conducted by the entire Board at The Edgewater Beach Hotel, Chicago, Illinois, April 26 - May 1, 1965.

Current Bulletins outlining present requirements, and application forms may be obtained by writing to Clyde L. Randall, M.D., Secretary-Treasurer, American Board of Obstetrics and Gynecology, 100 Meadow Road, Buffalo, New York 14216.

The Seventh District Medical Society held their meeting March 2, 1965 at the Westward Ho Country Club. **Leonard Akland, M.D.,** has transferred from associate staff membership to active staff membership and is associated with the Veterans Administration. **Thomas Gensler, M.D.** is a new member and is associated with **T. Angelos, M.D.** at Canton, S. D.

* * *

The 12th Western Cardiac Conference will be held at the Broadmoor Hotel in Colorado Springs, Colorado on May 14-16, 1965. The subject will be "Treatment of Cardiovascular Disease." For further information write to the Colorado Heart Association, 1375 Delaware Street, Denver, Colorado 80204.

* * *

The Annual Convention of the American Proctologic Society will be held June 14-16, 1965, at the Hotel Lemington in Minneapolis, Minnesota. For further information write to the Secretary: James A. Ferguson, M.D., 320 West Lafayette Avenue, Detroit, Michigan 48226.

WANTED — Younger or older General Practitioner who is tired of solo practice for association with 15 man midwest clinic in town of 30,000. Two Generalists now on staff. We can offer a more comfortable but adequately compensated Family Practice with accessible consultation and off-time coverage. Write Herbert H. Kersten, M.D., Fort Dodge, Iowa.

The Annual Course in Postgraduate Gastroenterology of the American College of Gastroenterology will be given at the Americana Hotel in Bal Harbour, Fla., October 28, 29, 30, 1965.

For further information and enrollment, write to the American College of Gastroenterology, 33 West 60th Street, New York, New York 10023.

* * *

The American College of Chest Physicians will hold its five-day annual meeting at the Waldorf Astoria Hotel, New York City, June 17-21, 1965. Dr. Alfred Goldman, St. Louis, Missouri, President of the College, will reside.

For additional information, write the American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois 60611.

* * *

The Rosebud District Medical Society held their election of officers and they are as follows: **M. R. Cosand, M.D.,** President, Winner; **P. Lakstigala, M.D.,** Vice-President, White River and **R. H. Hayes, M.D.,** Secretary, Winner.

* * *

The Annual Otolaryngologic Assembly of 1965 will be held October 30 through November 5, in the new Illinois Eye and Ear Infirmary at the Medical Center, Chicago. The Department of Otolaryngology of the University of Illinois College of Medicine offers a condensed postgraduate basic and clinical program for practicing otolaryngologists under the direction of Dr. Emanuel M. Skolnik. It is designed to bring to specialists current information in medical and surgical otorhinolaryngology. For further information, write to, Dept. of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, P. O. Box 6998, Chicago, Illinois 60680.

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File: Diarrhea

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1-2 yr.	½ tsp. 5 times daily (5 mg.)
2-5 yr.	1 tsp. t.i.d. (6 mg.)
5-8 yr.	1 tsp. q.i.d. (8 mg.)
8-12 yr.	1 tsp. 5 times daily (10 mg.)
Adult	2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per average teaspoonful.
Note: After diarrhea is controlled the initial dosage can usually be reduced to meet the requirements of the individual patient.

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Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride .....2.5 mg.
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Lomotil is an exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Cautions and Side Effects
Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

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Psoriatic arthritis responds in the same way as rheumatoid arthritis but the skin lesions are usually not affected either favorably or adversely by treatment.

Precautions
Before prescribing, the physician should obtain a complete history and perform a complete physical and laboratory examination, including a blood count.

The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools.

If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time.

Side effects
The most common side effects are nausea, edema and drug rash. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug.

Contraindications
These include: edema, hypertension, or danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when other potent chemotherapeutic agents are given concurrently because of the increased possibility of toxic reactions; when the patient cannot be seen regularly; when the patient is senile.

Note: The physician should be fully aware of dosage, precautions, side effects and contraindications as contained in the complete prescribing information.

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Vitamin B_1 (Thiamine Mononitrate)	10 mg.
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*Heredia Diaz, J. et al.: Medicina (Mex.) 38:308, July 10, 1958.

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Abortion, infected	45	44
Adnexitis (parametritis)	66	61
Cervicitis	18	18
Endometritis	64	61
Mastitis and breast abscess	44	42
Puerperal sepsis	14	14
Salpingitis	39	34
Other ob-gyn infections	51	46
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Note:
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*Hammerl, H.: Wien. Med. Wschr. 108:629, July 26, 1958.

Condition	No. of Patients	No. Responded To Signemycin
Abscess, pulmonary	17	16
Bronchiectasis	19	13
Bronchitis	286	267
Bronchopneumonia	192	179
Empyema	12	11
Pneumonia, lobar	150	146
Pneumonia, other febrile	160	150
Various infected pneumopathies	192	172
Totals	1,028	954 (92.8%)

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Note:
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*Loughlin, E. H. et al.: Antibiot. Med. 7:739, Dec., 1960.

Condition	No. of Patients	No. Responded to Signemycin
Amebiasis	237	222
Cholecystitis and cholangitis	105	97
Enteritis	41	31
Peritonitis	15	14
Various, including pancreatitis, appendicitis and colitis	27	23
Totals	425	387 (91.1%)

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Side Effects: Glossitis and allergic reactions, as well as severe anaphylactoid reactions, have been reported as rare side effects. Should significant reaction or idiosyncrasy occur, discontinue medication and institute countermeasures. Use of tetracycline during the last trimester of pregnancy, neonatal period and early childhood may cause discoloration of developing teeth. Reduce usual oral dosage and consider serum level determinations in patients with impaired renal function to prevent possible liver toxicity due to excessive accumulation of antibiotic in the serum.

Precautions: Overgrowth of nonsusceptible organisms may occur. In such cases, discontinue medication and institute appropriate specific therapy as indicated by susceptibility testing. Aluminum hydroxide gel given with antibiotics has been shown to decrease their absorption and is contraindicated. The coloring agents used in Signemycin Syrup and Pediatric Drops may produce red discoloration of stools.

Triacetyloleandomycin, a constituent of Signemycin, administered to adults in daily oral doses of 1.0 Gm. (3 Gm. Signemycin) for periods of more than ten days may produce hepatic dysfunction and jaundice. In the rare patient who requires this high dosage level of Signemycin initially, liver function should be carefully followed and dosage should be reduced, as promptly as possible, to the usual recommended range of 1.0 to 2.0 Gm. per day. Therefore, Signemycin is recommended primarily for the treatment of acute or severe infections, with treatment restricted to a ten-day period. If clinical judgment dictates continuation of therapy beyond ten days, serial monitoring of the liver profile should be carried out, including BSP, transaminase, and cephalin flocculation tests. Changes observed in liver function were reversible following discontinuation of the drug.

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Syrup: 125 mg. Signemycin (tetracycline equivalent to 83 mg. tetracycline HCl and 42 mg. oleandomycin as triacetyloleandomycin) per 5 cc.

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Note:

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Condition	No. of Patients	No. Responded To Signemycin
Ear, nose and throat infections	507	465
Respiratory infections	1,028	954
Gastrointestinal infections	425	387
Genitourinary infections	748	684
Skin and soft-tissue infections	1,088	1,036
Bone and joint infections	71	64
Deep-seated or generalized infections	257	251
Obstetrical & gynecological infections	341	320
Miscellaneous conditions	592	570
Totals	5,057	4,731 (93.5%)

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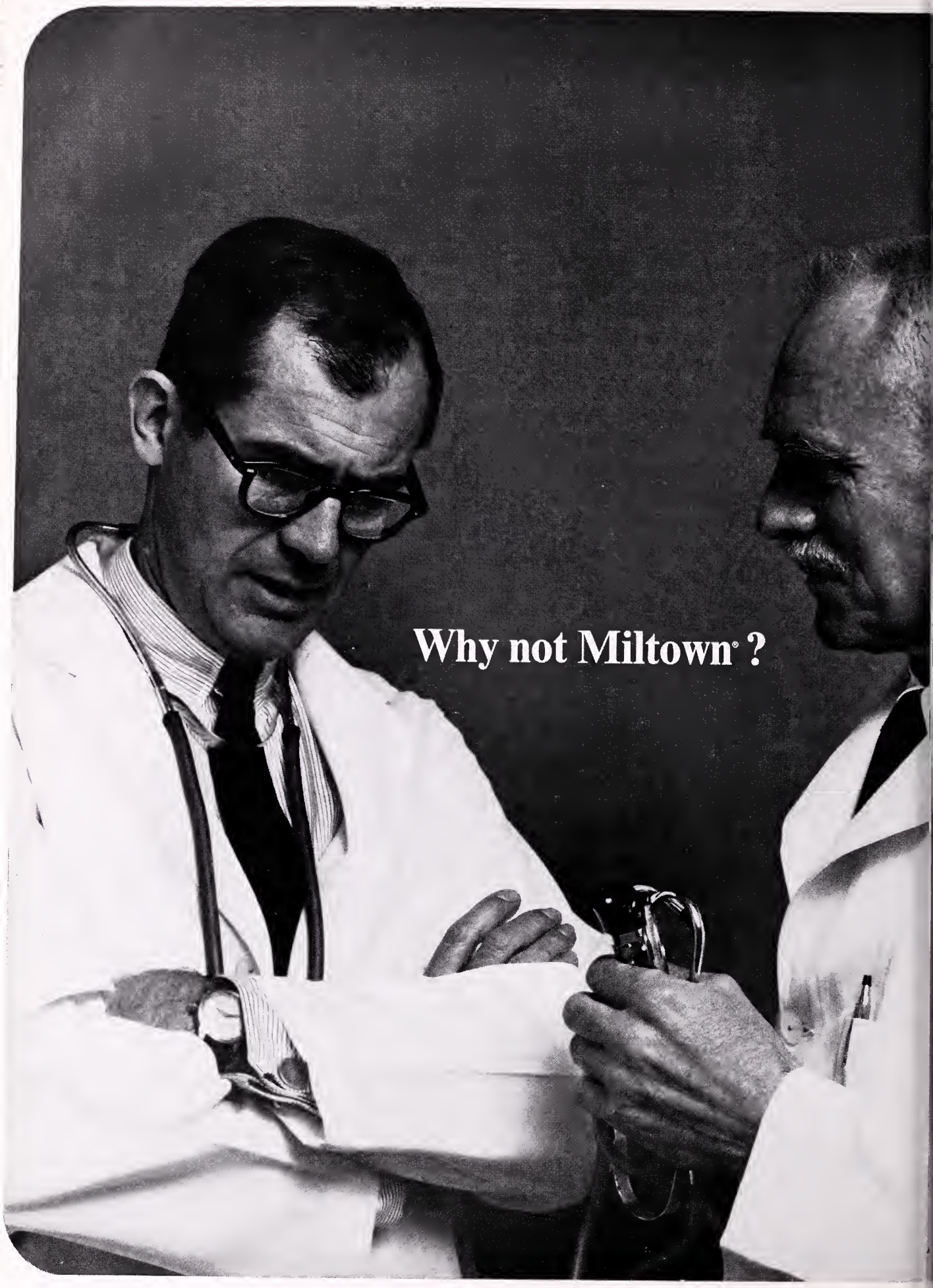
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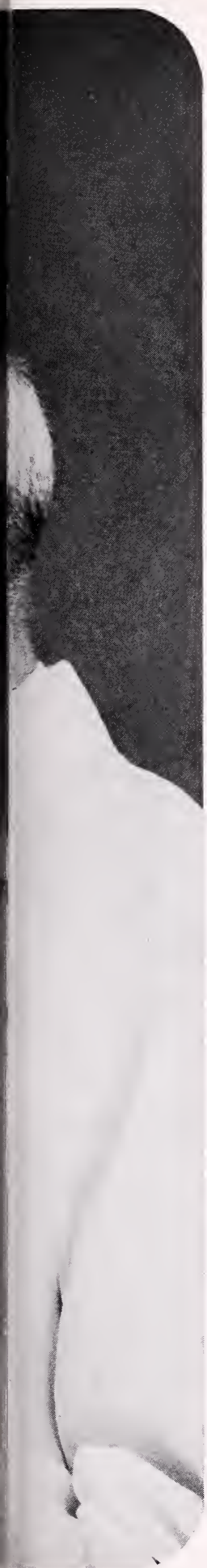
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Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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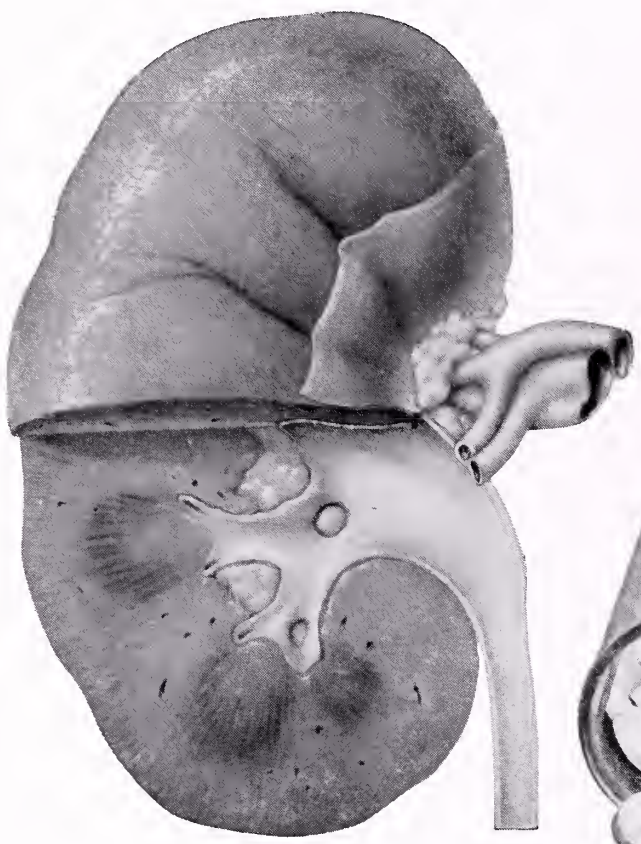
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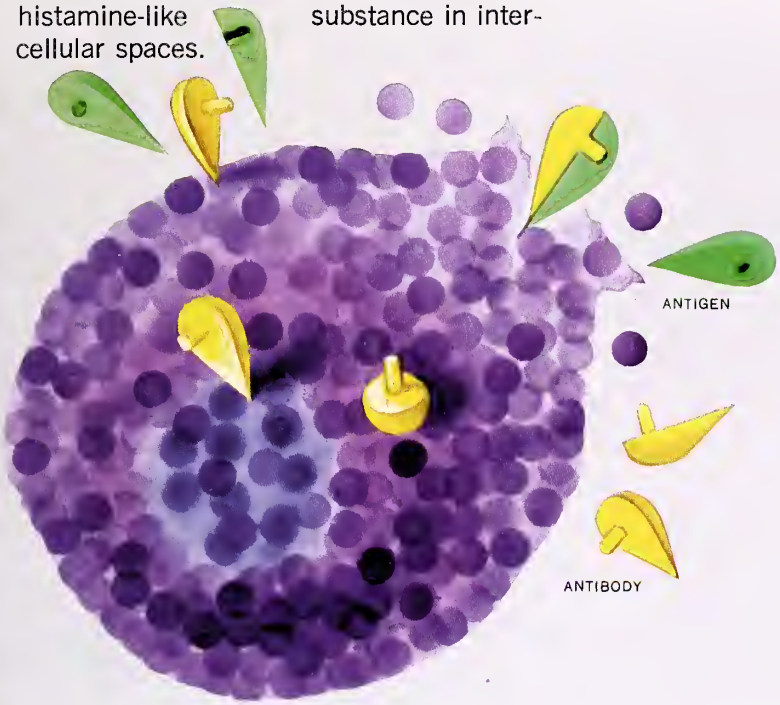
Along with other research teams at Merck Sharp & Dohme, the Renal Research Program continues to add new understanding of basic problems—understanding which will lead to important new therapeutic agents.

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where today's theory is tomorrow's therapy

in theory, allergy begins like this:

When antigens invade the body, antibodies, formed chiefly by plasma cells, may become attached to mast cells. If the same antigen reappears and reacts with the antibodies, the mast cell disrupts (as pictured below). Subsequently, the "exploding" mast cell deposits granules of bound histamine or histamine-like substance in intercellular spaces.



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Although the mechanisms of allergy are still theoretical, the response to Dimetane (brompheniramine maleate) is ample proof that a good antihistamine can, and does, work—and (as reported in one investigation*) with no more sedation than placebo. Dimetane (brompheniramine maleate) assures your allergy patients prompt relief of symptoms while usually permitting them to lead active, alert lives. And a single Extentab provides continuous action for up to 10-12 hours.

*Schiller, I.W. and Lowell, F.C.: New England J. Med. *261*:478, 1959.

BRIEF SUMMARY: *Contraindications:* Hypersensitivity to antihistamines. Not recommended for use during pregnancy. *Precautions:* Until response is determined, patient should be cautioned against engaging in mechanical operations requiring alertness. *Side Effects:* Hypersensitivity reactions, including skin rashes, urticaria, hypotension, and thrombocytopenia have been reported rarely. Occasional transitory drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered. *Other dosage forms available:* conventional tablets (4 mg.); Elixir (2 mg./5 cc.); Injectable (10 mg./cc. ampuls, and 100 mg./cc. in 2 cc. vials).

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basic therapy in low-back pain: bed, board, heat

Whether low-back pain is in the chronic or acute phase, the appropriateness of bed rest for such a patient is beyond controversy. Boards placed under the mattress, for a firmer bed to further immobilize the spine, are another common recommendation. And most investigators consider heat beneficial—moist heat in particular.[1-5]



and Robaxin®-750
(methocarbamol 750 mg.)

(CAPSULE-SHAPED TABLETS)



It has been noted that low-back disorders frequently "...are caused by truly mechanical conditions which yield to conservative treatment."[1] Basic to this conservative treatment are bed rest, a board for the bed, and applied heat. In addition, a good muscle relaxant is often helpful, as "...muscle relaxants are useful in chronic as well as acute low backaches."[4]

Robaxin (methocarbamol) has relieved spasm and pain in cases where the patient "had not responded to conservative measures prior to drug therapy."[6] A 100-patient study showed that Robaxin provided greater relief of muscle spasm for a longer period of time without adverse reactions "than any other commonly used relaxants...."[6]

A well-tolerated[7] skeletal muscle relaxant with "specificity of action,"[7] methocarbamol leaves normal muscle tone unaffected. Moreover, there is little likelihood of sedation[7]—a considerable advantage for the patient who must remain active and alert on his job.

Significantly, clinicians advise using a muscle relaxant "early and in adequate dosage."[8] In this regard, Robaxin (methocarbamol)—*particularly in the 750 mg. dosage (2 tabs. q.i.d.)*—offers optimal therapeutic benefits without a significantly increased incidence of side effects. And just as it works well as part of the basic regimen for low-back pain, so also does Robaxin (methocarbamol) often provide muscle relaxation in such conditions as musculoskeletal injury, chronic neurological disorders, and orthopedic situations.

BRIEF SUMMARY—Robaxin (methocarbamol) Tablets: Contraindicated in hypersensitive patients. Side effects (light-headedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently.

ALSO AVAILABLE: Robaxin® Tablets (methocarbamol, 500 mg.) Robaxin Injectable (methocarbamol, 1 Gm./10 cc.)
Robaxisal® (methocarbamol with aspirin) and Robaxisal-PH Tablets (methocarbamol with Phenaphen®).

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Traumatic Separation of the Tendo-Achilles

by

H. Phil Gross, M.D.
Sioux Falls, S. Dak.

The consequence of an arrow piercing the heel of the Greek warrior Achilles was death.[1] The consequences of trauma to the tendo-Achilles in this day and age are not nearly so disastrous, but serious enough to warrant discussion. The morbidity from separation of the heel cord is severe, and deserves accurate diagnosis and prompt treatment.

The following cases are reported to illustrate spontaneous separation from forced plantar flexion, the most common type of injury — as well as laceration from a sharp external object — a rarer injury.

Presentation

Case I. L. J. W., #1532. Mr. L. J. W. is a 59 year old school principal. While playing with the children during a recess period he lunged forward to catch a ball. He felt a sudden snapping and pain in the left heel and since then had noted his inability to stand on the toes. Slight pain remained within the heel area. The patient was seen one day after the injury.

Examination showed a definite defect palpable in the tendo-Achilles. He was able to dorsi-flex and plantar-flex the foot but was not able to stand on tip toe. This foot could be dorsiflexed slightly beyond the opposite foot. He had good circulation of the foot with no evidence of neurologic loss.

X-rays of the ankle and foot were negative for bony injury.

It was our impression this patient had a rupture of the tendo-Achilles and he was scheduled for repair of same the following morning. This was carried out using a Bunnell type pull-out wire[2] which was attached over a button on the heel. The tendon at operation appeared to be

quite frayed with areas of hemorrhage as well as maceration.

The microscopic findings on portions of tendons submitted to pathology showed hyalinized fibrous tendon tissue with areas of fibrous and fibroadipose tissue containing congested small blood vessels in the surrounding tissue.

This patient did well post-operatively and was maintained in a long leg cast for four weeks and an additional two weeks in a short leg cast. At this time the pull-out wire was removed and the patient initially started walking on a raised heel. At ten weeks he could walk well on his heels and his toes and had an excellent gait. On palpation of the tendo-Achilles, only slight thickening could be palpated without evidence of any further defect.

Case II. J. H. is a 68 year old landscape architect who stepped on a sickle blade while at work. This projected immediately behind the foot and cut through his boot in addition to the back portion of his ankle. This caused very little bleeding and very little pain.

Examination showed a definite small laceration measuring 2 cm in length across the lower portion of the tendo-Achilles. There was no neurologic deficit and the patient maintained good circulation of the foot. The patient could not stand on his toes, the foot could be dorsiflexed beyond the opposite foot, but he still maintained active dorsi and plantar flexion. The cut ends of the tendo-Achilles could easily be observed within the wound.

This patient was taken immediately to the operating room where under general anesthetic the tendo-Achilles was repaired with heavy chromic cat gut suture using buried Bunnell type tendon repair.[2]

This patient's post operative course was benign and he was maintained in a long leg cast for three weeks. A short leg cast was applied for an additional three weeks. He was fitted with a slightly raised heel initially but at three months post-injury was able to walk well with a full range of motion and without pain. The patient was able to stand on his toes and walk on his heels with no notable defect. He also had no pain at this time.

Case III. R. M., #02622. R. M. is a five-year old boy, who while playing in the yard was struck by a pedal of a tricycle driven by an older brother. This struck him directly in the heel and he suffered a small wound.

Examination revealed a wound of the posterior portion of the right heel and within the wound could be seen a complete laceration of the tendo-Achilles. There was no neurologic deficit present. The patient had surprisingly little pain on any palpation or movement of the foot. He could not stand on his toes and dorsiflexion was possible beyond the limits of the opposite foot. He could still dorsi-flex and plantar-flex actively. The circulation of the foot was intact.

The patient was taken immediately to the operating room and after thorough debridement of the wound a primary repair using heavy chromic cat gut was done. It was noted that the plantaris tendon was still intact. A Bunnell type of repair with buried cat gut sutures was done.

This patient's post-operative course was uneventful and he was maintained in a long leg cast for three weeks. Following this a short leg walker was applied in which he was maintained for an additional month.

This time the cast was removed and the patient started on ambulation. A built up shoe was not used in this instance but the patient regained a normal gait within one month. He had no pain at the end of this time.

Discussion A — Diagnosis

The first case, L. J. W., illustrates a sedentary man of middle age, engaging only occasionally in strenuous activity. While lunging forward, there occurs a sudden painful snapping, followed by a mild to moderate pain and swelling in the area of the tendo-Achilles. A calcaneal type gait follows due to lack of push-off by the gastrocnemius.

Initially, physical findings may be limited to mild painful swelling in the heel cord. The foot can be plantar flexed through the action of the intact posterior tibial tendon, and the defect in the tendon itself may be filled with blood clot. However, if the examiner is careful to note, the patient **cannot** stand on his toes, the dorsiflexion may be **increased** over the other foot. Also, on careful palpation the clot can be displaced enough to feel the defect in the heel cord. Radiography will be of no help if the skeletal structures are relied upon — although by carefully focusing on the soft tissue the diagnosis can be determined.[3]

With a laceration as described in the last two cases, there is no problem in diagnosis as the cut ends of the tendon are visible in the open wound. It is surprising that this wound causes little pain. Neither patient required analgesics. Perhaps this explains why incision of the heel

cord was a popular method of preventing slaves from running away 100 or more years ago.

Treatment

Once the diagnosis is established, the treatment is surgical repair. Although there have been sporadic reports that simple casting in equinous will suffice, I have seen no published series, and have not had the courage to pursue this course of treatment because of the excellent results obtained at open operation. As illustrated in the first case, a Bunnell pull-out type wire may be required; tying it over a button on the heel because of the poor integrity of the tendo-Achilles and its lack of ability to hold suture. In the last two cases, dealing with normal structures, an absorbable buried suture was used, again inserted after the method of Bunnell.

There is some controversy as to whether degeneration of the tendo-Achilles is present prior to the spontaneous rupture or not. In the first case, there was no question but that the spontaneous rupture showed gross and microscopic evidence of fraying and degeneration, whereas the two acute lacerations showed healthy, firm tendon with a simple division.

The repaired tendon should be protected for three weeks in a long leg cast with the knee bent slightly and the ankle in equinous. The next three weeks can be spent in a short leg cast, with some weight bearing. At six weeks all external support can be removed, and weight bearing with a raised heel gradually resumed. As the heel cord assumes its normal mobility, the heel can be lowered by increments to its normal height.

The prognosis with repair is uniformly excellent. However, with neglect, or tardy diagnosis, a severe calcaneal gait will persist. Then even with repair, the chances of remaining calf weakness, limp, or pain increase as the interim between injury and repair lengthens.[4]

Summary

Three cases illustrating acute spontaneous rupture and laceration of the tendo-Achilles have been presented. These demonstrate the diagnosis and treatment necessary to obtain a satisfactory result.

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*Geriatric Gynecology

by

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* Presented at the Sioux Valley Medical Association Meeting, February 18, 1965.

Introduction

The past half century has experienced an advance in the average life span of the female. Since 1900 there has been a four fold increase in the number of persons 65 years of age or older. It is estimated that by 1980 one half of the population of the United States will be over the age of 55 years.

The predictable life expectancy of the population at the various age levels has also increased. An 80 year old has an expectancy of 6.5 years, at 85 an expectancy of five years, and at 90 an expectancy of 3.5 years.

With an estimation that one half of our population will be over 55 years of age by 1980 and half of that population or more being females, it would seem wise that the members of the medical profession review from time to time the gynecological problems of the aging female. It is suggested that a gynecological survey be made of every patient on an annual basis, screening the patient for common conditions, for mammary and pelvic malignancies, symptomatic vaginal relaxations, and the presence of stress incontinence. This survey should include:

a. Examination of the breasts
b. Cytologic survey of the genital tract
c. Vaginal examination
d. Rectal examination
e. Recto-vaginal examination

Common Post-Climacteric Complaints

Senile Vaginitis:

The onset of the climacteric may be the onset of vaginal atrophy with thinning of the vaginal mucosa, change in the cytological index, lowered resistance to infection, and the development of senile vaginitis. The patient complains

that she has a vaginal discharge frequently blood tinged, there is dyspareunia and frequent attacks of cystitis usually occurring postcoital, as well as postcoital bleeding. The vaginal mucosa is thin and pale, frequently studded with petechial like hemorrhages, the cytological index shows little or no estrogen effect. The local application of an estrogen cream, such as Premarin, 0.625 mgm. to one gm. of cream, to the vaginal canal daily for seven to ten days then once or twice a week as needed will usually restore the vagina to normal color with a normal cytological index and disappearance of symptoms. The dosage of estrogen is usually small enough to prevent bleeding from the uterus if the uterus is present. The patient should be warned that bleeding may occur and given instructions to report its occurrence immediately.

Post Climacteric Bleeding:

Every woman who has had amenorrhea for six to eight months after the climacteric and cessation of menses, and begins to have uterine bleeding should be considered to have a malignancy until proven otherwise, although only 16 percent of patients in a recent study of post menopausal bleeding were found to have malignancy as a cause of their bleeding.[5] Novak,[3] states that in his community, (Baltimore), "it is probable that one of the major causes of postmenopausal bleeding is hormone therapy."

The patient with post climacteric bleeding should have a cytological survey, perhaps with intrauterine aspiration, and a diagnostic curettage associated with biopsy or conization of the cervix. Although intrauterine aspiration may confirm a diagnosis of endometrial carcinoma, it is not as accurate as a curettage. A negative report does not rule out cancer or relieve the physician of his duty to perform a diagnostic curettage.

Endometrial and cervical polypi are a common finding on a dilatation and curettage, and the former may be frequently missed. The finding of a polyp protruding through the cervix at an initial office examination does not warrant removal of the polyp without performing a curettage as well. I have personally had several cases of post menopausal bleeding with a visible polyp with additional polyps of the cervix or uterine endometrium, or carcinoma of the endometrium which would have been missed if no curettage had been done. Recurrent postmenopausal bleeding which requires two dilatations and curettages and no cause found for the bleeding should probably be treated by hysterectomy.

Pyometra:

Definition: Pyometra is a collection of purulent material in the uterine cavity usually developing as a result of cervical stricture and frequently associated with malignant disease of the cervix or endometrium, i.e., 68.3 per cent.[4]

Diagnosis: The patient may give a history of constant or intermittent discharge from the vagina frequently associated with suprapubic pain. On pelvic examination pus may be found exuding from the cervix. The uterine external os may be closed or difficult to identify. The uterus may be normal size or enlarged, globular, and tense.

Treatment: If the uterus can be sounded, and a pyometra is present, the passage of a sound is usually followed by active drainage of purulent material. Dilatation of the cervix will then establish adequate drainage. A curettage should not be done at that time because of danger of perforation and increasing infection. However, it should be done as soon as possible after the infection has subsided. If malignancy is found and treatment by irradiation is selected as a total method of therapy or as a preliminary course of therapy prior to surgery, it should be initiated with external irradiation until all danger of lighting up a pelvic infection has passed. If the cervix cannot be sounded, hysterectomy is indicated.

Prophylaxis: Because stenosis of the cervix is so frequently subsequent to cauterization or conization of the cervix, these procedures should be frequently followed by routine cervical dilatations to maintain patency of the cervical canal.

Post Climacteric Surgery

Chronological age of itself in the presence of our more modern medical, surgical, and anesthetic techniques is no contraindication to surgery. Many surgical procedures, done today on the aging female, were considered to be impossible or impractical a generation or two ago.

Preoperative Evaluation and Care

Mattingly,[2] states that at the Milwaukee County Hospital, 20 percent of the gynecological admissions are beyond the age of 65 years. Preoperative evaluation of this group of patients is most important to ascertain the medical status of the patient. Many elderly women are reluctant to discuss their physical problems, will con-

ceal some abnormality and learn to live with it so that the physical disability or disease may be far advanced before a physician is consulted. Dehydration, hypovolemia, hypoproteinemia, cardiac decompensation, hypertension, and other physical states must be sought out and corrected before surgery is done. Wherever radical surgery or irradiation for malignancy of the pelvis is considered, a review of the patient's socio-economic status should be done. This review should include the following:

(1) What will the contemplated procedure accomplish? Will it be curative or palliative?

(2) Will the contemplated procedure render the patient's daily living more comfortable or less so?

(3) Where does she live; how does she care for herself; who is responsible for her and her care; will she be able to care for herself and if not will the care be adequate or will she have to make-shift for herself?

Most gynecological surgical procedures are elective and time can be spent without hazard to the patient in correcting medical states or rendering them less hazardous to the patient at the time of surgery. A few days or even a week of preoperative study and preparation for surgery will be time well spent for it will reduce postoperative complications and postoperative time in the hospital. Many of our aging females are diabetic or potential diabetics and should be carefully evaluated prior to surgery. She should be in good control prior to surgery. Wound healing in the diabetic is poor in the well controlled, and much worse in the uncontrolled. Our practice has been to use regional anesthesia for surgery. An intravenous of invert sugar is started at 7 A.M. and protected with the individual required amount of regular insulin. Intravenous fluids are continued for 24 hours. Clinitests are done every four hours and the amount of regular insulin given judged by the clinitest reaction as follows:

O	
+	5 units
++	10 units
+++	15 units
++++	20 units

Liquid diet is begun as soon as the patient is able to eat.

Anesthesia: Wherever possible a competent anesthesiologist should also evaluate the patient so that the most favorable type of anesthesia may be given at the time of surgery. Preoperative medication for the elderly patient should not be great. If a drying agent such as atropine is used the dosage should be kept low.

Postoperative Care: Postoperatively, the patient should be watched carefully for serious cardiac or pulmonary difficulties. If the patient has been in the lithotomy position for some time, the legs should be elevated and even wrapped with bandages to prevent pooling of the blood in the lower extremities and a state of hypotension.

Early bed activity with leg exercises should be encouraged and the ambulation accomplished as soon as possible, thus reducing the possibility of venous thrombosis.

Surgical Procedures

A. Vaginal operations for relaxations and uterine prolapse.

The type of operative procedure chosen should be selected by the surgeon for the individual patient. Regardless of the procedure done, care should be utilized in the correction of stress incontinence by plication of the urethra and utilizing of the Kelly method of bladder neck plication. Many patients have a small enterocele and unless careful inspection is done, it may go unrecognized and the patient return with all the symptoms of vaginal pressure and protrusion fairly soon. An attempt should be made to correct the enterocele at the time of the posterior repair. Or, in the case of a vaginal hysterectomy, extensive plication of the uterosacral ligaments as described by McCall,[1] should be done.

The surgeon should be careful to maintain adequate vaginal depth and circumference in those women who still practice coitus.

B. Carcinoma of the vulva — Carcinoma of the vulva is preferably treated by radical vulvectomy and lymph gland desection.

C. Abdominal operation of pelvic relaxation.

Mattingly,[2] has suggested that the prolapse of the vaginal vault be corrected by the abdominal approach utilizing mersilene ribbon to suspend the prolapsed vault. It is introduced extra peritoneally, anchored to the vault by silk sutures and to the anterior rectus fascia. The cul-de-sac is then obliterated by concentric rows of silk purse string sutures which pass through the peritoneum of the sacrum, the parietal peritoneum of the right lateral pelvic wall, the visceroperitoneum of the rectosigmoid and the rectovaginal septum.

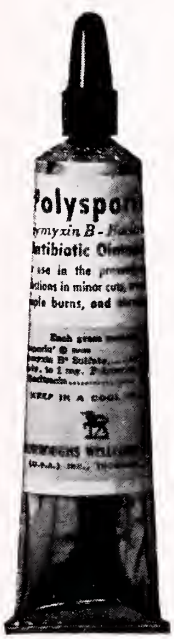
D. Abdominal Operations.

1. Benign Tumors of the Ovary.
   Benign tumors of the ovary do occur in this age group and bilateral salpingo-oophorectomy and total hysterectomy should be the operative procedure of choice but modified by the condition of the patient.
2. Malignant Tumors of the Ovary.
   Whenever possible bilateral salpingo-oophorectomy, total hysterectomy and removal of the omentum should be done. Many patients prove to be inoperable or only partially operable. A second look following irradiation therapy may be warranted in some cases.
3. Carcinoma of the Endometrium.
   Surgery is the treatment of choice in this condition although there is controversial literature recommending preoperative irradiation—either the application of radium to the uterus and vaginal vaults or the institution of deep X-ray or Cobalt therapy. An adequate vaginal cuff (upper 1/3 of the vagina) should be removed to reduce the incidence of recurrence in the vault of the vagina.
4. Carcinoma of the Cervix.
   Personally, I am an advocate of the radiation therapy in this disease and reserve surgery for those people in whom irradiation is contraindicated such as associated pelvic disease requiring surgery, history of pelvic inflammatory disease, previous irradiation, and for those who have on followup examination persistent or recurrent carcinoma.
5. Radical Exenteration.
   Before radical exenteration is done on a patient in this age group, the surgeon should carefully evaluate his indications and the patient's condition and then ask himself "although I can do this operation and although I may have a technical success, how much better off will my patient be coping with a long recovery and the care of multiple urinary and fecal drainages from the abdominal wall. Will she become disassociated from her friends and her environment and become an emotional invalid?"

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*Artificial Kidney: Clinical Aspects of Dialysis

by

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Studies leading to the development of the artificial kidney were begun in 1877 when solutes were transferred across the peritoneal surface and thus were removed from the body. The transfer of solutes by dialysis from the blood across a semi-permeable membrane into rinsing fluid in contact with the other side of the membrane has become the basis of the modern artificial kidney. Many membranes have been used, both artificial and animal. The peritoneum and the intestines have been studied extensively. In 1913 Abel, Roundtree, and Turner, reported passing dog blood through a series of collodion tubes and extracting salicylates from the circulating blood. They used Hirudin from leeches as an anticoagulant. They stated at that time "a method has been devised by which the blood of a living animal may be submitted to dialysis outside the body."

In 1947 Kolff, while working in Holland, devised the first artificial kidney in which cellophane tubing was wound on a rotating drum and was immersed in a dialyzing solution. In the same year, Alwall reported his artificial kidney in which the cellophane membrane was wound between two vertically placed screens and the screens were placed in a dialyzing bath, which circulated in a direction counter to the blood flow. In 1953, the first apparatus in which coils of cellophane wound concentrically between plastic screening and then immersed in a dialyzing bath in a pressure cooker was described. Kolff adapted this idea, winding the cellophane and screening first on fruit cans and later on beer cans, finally producing the "twin coil artificial kidney." This is the kidney we are using and is commercially produced by the

* Presented at the Sioux Valley Medical Association Meeting — February 18, 1965.

Travenol Company. It is both a dialyzer and an ultra-filter because of the hydrostatic pressure which is exerted through the tubing.

There are at least three other types of apparatus which are satisfactory and are widely used. The Skeggs-Leonards kidney consists of sheets of cellophane compressed between grooved plastic pads. The MacNeill dialyzer is produced commercially by the Warren A. Collins Company and is a small apparatus consisting of a plate-type dialyzer. The Alwall dialyzer also is produced commercially. A smaller unit, the Kiil dialyzer is also available.

The cellophane membrane used today is the same as that used by Thalheimer in 1937, produced commercially by a company which manufactures it primarily as a sausage casing. The pore radius in the swollen state is approximately 30 A, comparable to the pores in a muscle capillary.

The Kolff twin coil apparatus has several advantages. Its initial cost is more than the other types and the coils are more expensive. Each coil retails for $59.00. Recently a smaller coil has been devised which costs $29.00. The initial cost is made up in safety and sterility. The saving in labor of tearing down the coils, cleaning them, and sterilizing them more than compensates for the high initial cost. The mechanics of the apparatus are not too complicated. It is safe and there is no evidence that it produces excess hemolysis or other mechanical effects on the blood. The platelets and the white blood cells in the blood may decrease due to their adherence to the cellophane, but this has not been a major problem. With regional heparinization, there is little hazard to the patient from bleeding.

The artificial kidney is an excellent means of correcting abnormal blood chemistries as occur in uremia, hypernatremia, poisoning, and water loading. It is the only good method of removing such excesses.

I wish to discuss the indications for the use of the artificial kidney, the contraindications, and what we may expect to accomplish by it.

Since the twin coil artificial kidney is both a dialyzer and an ultra-filter, because of the hydrostatic pressure exerted through the coils, a rupture in the cellophane coil cannot cause infusion of the bath fluid into the patient's circulation.

Hemodialysis with the artificial kidney is indicated in the following types of cases:

1. Acute oliguria due to lower nephron nephrosis, acute nephritis, obstructive uropathies, and renal artery thrombosis.
2. Chronic renal disease, especially during acute exacerbations, acute infections, surgical emergencies, and periods of inadequate care.
3. Acute poisonings from barbiturates, doriden, salicylates, methyl alcohol, bromides, dilantin, ammonia, ethylene glycol, radioactive isotopes as calcium and tritium, darvon, potassium bromide, home permanents, organic mercury, quinidine, isoniazid, and any other substance which is excreted by the kidneys.

   In barbiturate poisonings, dialysis should be started if the patient is in shock and if his respirations have to be supported. In general, patients with barbiturate poisoning should be dialyzed when the blood level of a short acting barbiturate is 3 mgms. per cent, the intermediate acting 5 mgms. per cent, and the long acting 8 mgms. per cent. In cases of acute poisoning, dialysis is continued until the patient is awake and out of danger.
4. Acute electrolyte disturbances as hypernatremia and hyperkalemia.
5. Hepatic coma.
6. Intractable edema.

In patients with acute oliguria and poisoning we can expect complete recovery if the patient survives the acute episode. Acute oliguria is still extremely serious. The mortality rate even with dialysis is still 46 to 60 per cent. It was 80 to 100 per cent without dialysis. Holmes has advised dialyzing these patients earlier and the mortality rate has been 22 per cent in his series.

The following factors will help determine when dialysis should be done in patients with acute oliguria:

1. Signs of hyperkalemia
   (a) Electrocardiogram showing a widening of the Q RS complex, prolongation of the PR interval, progressing to auricular fibrillation.
   (b) Ascending quadraplegia
   (c) Paralytic ileus.

If the potassium is 6.2 meq. per liter or 6.2 meq./L, one should plan to dialyze within 24 hours if the potassium does not come down with treatment consisting of:

(a) Administration of 10 or 15 per cent glucose with regular insulin in a dose of 1 unit per 2 gms. of glucose.

(b) Sodium bicarbonate intravenously 120 to 160 meq. or 10 to 14 gms. of sodium bicarbonate. Enough should be given to bring the serum bicarbonate level to 20 meq. The sodium bicarbonate intravenously causes an abrupt shift of potassium into the cells and it may drop the potassium 2 meq. per liter. It will be effective if the patient is acidotic.

(c) Sodium resin using 15 gm. q.i.d. Each gram of resin removes 1 to 2 meq. of potassium and adds 2 to 3 meq. of sodium per liter to the body fluids. The added sodium causes a shift of potassium into the cells. This resin may be obtained from Smith-Kline & French Company by request. It has not been marketed commercially. If the blood potassium level has not responded to these measures the patient should be dialyzed immediately.

2. Blood urea nitrogen of 125 to 150 mgms. per cent — at this level of urea serious complications are likely to occur.
3. A decline of the CO_2 combining power to 12 meq. per liter or an R fraction over 30 meq. per liter. The R fraction is the undetermined anion fraction and is determined by subtracting the sum of the CO_2 combining power and the chloride in meq. per liter from the sodium. The normal R fraction is 12.

   In these acute cases the BUN, CO_2 combining power, potassium, and R fractions should be determined daily. These values will change rapidly in the acute cases and the decision to dialyze often is based upon these values.
4. Excess fluid loads with water intoxication giving pulmonary edema, convulsions, restlessness, twitching, muscle cramps, and coma. Cellular over-hydration will give anorexia, lassitude, and change of mood.
5. Progressive signs of uremia such as nausea and vomiting, mental depression, disorientation, muscle twitching, and convulsions.

The improvement in the mortality rate of acute oliguria has come about as the result of dialyzing these patients earlier. Sometimes the patient has to be dialyzed even in the diuretic phase if the urea nitrogen has continued to rise. The urea nitrogen will rise after the onset of diuresis until the output is well over 2000 cc. per 24 hours.

There are practically no absolute contraindications to dialysis. Bleeding tendencies formerly were considered contraindications but with regional heparinization the bleeding can be controlled. Heparin is added to the blood at the arterial end of the coil and it is neutralized on the venous side with protamine as the blood returns into the body. A recent coronary occlusion is a relative contraindication but even here dialysis may be life saving on occasion. Dialysis is more dangerous in a digitalized patient because removal of potassium may precipitate an arrhythmia. This, however, can be controlled by balancing the potassium ion loss through the concentration of potassium in the bath and decreasing the calcium content of the bath.

When should dialysis be used in the patient with chronic uremia in whom there is little hope of permanently helping the patient? The most important indication in these patients is the appearance of clinical signs that interfere with the patient's life. If the patient is bad, he is entitled to one or two dialyses to determine if his kidneys are able to function adequately after the excess load has been removed. If the patient has not improved, most doctors feel that dialysis should not be continued unless there are plans for kidney transplant. The first patient we dialyzed was a 77 year old man with chronic uremia who was comatose when the procedure was started. He was awake and talking to us at the end of the procedure and he is still alive, home, and feeling reasonably well ten months later, after only one dialysis. We cannot tell in advance which of the patients may respond in this manner. This is certainly better palliative therapy than many of the operative procedures we do for malignancy and other incurable diseases.

Some complications have been reported following dialysis, but many of these are the result of the illness rather than the dialysis itself. The bath solution is not sterile. The cellophane coil is quite impervious to bacteria and viruses. It has been found that sterilizing the bath solution caused more pyrogenic reactions than using unsterilized fluid. Septicemia has been a rare occurrence in these patients. Some have developed a pancreatitis but this is more likely caused by the uremia than the dialysis. The same might be said for the other complications such as parotitis, pneumonia, genital urinary infections, peritonitis, pelvic infections, acute cholecystitis, respiratory tract obstructions, wound infection, gastrointestinal hemorrhage,

and myocardial infarction. Cardiac arrhythmias have occurred if the potassium level has not been carefully controlled. If a patient may have to be dialyzed, he should not be digitalized because it becomes more difficult to dialyze him. The patient is monitored with the electrocardiogram to determine the appearance of any arrhythmia.

We can regulate the rapidity with which we remove substances from the patient's blood stream by varying the bath solution. Normally in the bath we use sodium chloride 570 to 600 gms., sodium bicarbonate 230 to 300 gms., dextrose 250 to 500 gms., potassium chloride 30 to 40 gms., calcium chloride 28 gms., magnesium chloride 10 gms., and lactic acid 30 cc. per 100 liters (25 gallons) of bath solution. The lactic acid is varied to keep the pH at 7.4. We may remove fluid from the patient by increasing the glucose in the bath to 500 gms., and increasing the pressure within the coil to 200 to 240 mm. of mercury. If the patient has no edema but has a toxic problem, we will use 600 gms. of sodium chloride, 300 gms. of sodium bicarbonate and add 20 gms. of urea and 5 gms. of monobasic phosphate. In heart disease, hypertension, and in those patients with edema, we may decrease the sodium chloride to as low as 550 gms., and the sodium bicarbonate to 230 gms. If the patient is digitalized, and especially if he is showing any arrhythmia, we may add 5 gms. of potassium chloride. We never use over 40 gms. per bath solution. If the patient still has an arrhythmia, we may decrease the calcium chloride to 24 gms. If the blood pressure falls, we add saline into the arterial side and, if this does not compensate for the blood pressure fall, aramine or levophed is added. If the blood pressure increases, we increase the coil pressure to 240 and, if this does not control it, we use arfonad which is a ganglionic blocker, 1 ampule of arfonad (10 cc.) in 500 cc. of 5 per cent dextrose in water. The bath solution is changed every two hours.

The hemodialysis team is most important. There are many duties during dialysis including careful observation of the patient, full responsibility for the mechanical operation of the machine, maintenance of regional heparinization, monitoring the electrocardiogram, checking the clotting time of the blood every one half hour, preparing the bath solution, and regulating the amount of fluid taken from or added to the patient. In order to determine the fluid balance the procedure is carried out on a bed scale.

Many physicians feel that peritoneal dialysis is as good as dialysis with the artificial kidney. A comparison of these two methods was made by Smith, Simon, and delGreco at Northwestern University and reported in the Archives of Internal Medicine in November, 1964. They state that peritoneal dialysis was "much less effective than hemodialysis in relieving uremic symptoms and far more prone to complications." They felt that this might partially be due to the fact that peritoneal dialysis is often employed in the terminal stage and the rate of exchange is not adequate. Three of their patients treated with peritoneal dialysis developed marked generalized muscle wasting and severe peripheral neuropathy, which they ascribed to a combination of protein depletion caused by the procedure, reduced dietary intake, and the removal by peritoneal dialysis of metabolites essential for the normal function of the nervous system, or from the effect of unknown toxic metabolites not adequately removed by the peritoneal dialysis. Six of their fifteen patients treated with peritoneal dialysis developed peritonitis. Because of the frequency of infection, no patients are considered for kidney transplants who have had peritoneal dialysis. The Northwestern group treated thirty-one cases with chronic renal disease with the twin coil kidney and found that prolonged remission of uremia occurred in ten patients after the first hemodialysis with a mean survival rate of eleven months, and three patients were living one year or more. Poorly sustained remissions occurred in twenty-one patients with average survival time of 2.1 months. Their complications in a total of ninety-five hemodialyses were postural hypotension in two patients, coronary insufficiency in one patient, and a fatal cardiac arrhythmia in one patient.

Patients with acute renal shutdown have to be dialyzed every two or three days until their kidneys are able to maintain their function. The arterial cannula is placed in the radial artery and the venous cannula is placed in the antecubital vein. If the blood pressure is very low, the arterial cannula may be inserted into the femoral vein or the inferior vena cava. When repeated dialyses are necessary, it is important to fully utilize the radial artery and the antecubital vein. Between dialyses we use an arterio-venous shunt made of Teflon. This is a very important part of the dialysis procedure. The success of the procedure depends upon good and adequate arterial and venous connections.

Our "kidney team" includes Mr. Booth, a registered nurse who has spent some time at the

University of Colorado for indoctrination, and Mrs. Elaine Ballew, the nurse in charge of Intensive Care. They set up the kidney and, when we have connected the patient to the kidney and the patient's condition has stabilized, they monitor the procedure. It is necessary that the physician be in attendance when we change the bath solution or when any problems arise. They check the clotting time, watch the blood pressure, and continuously check the condition of the patient.

In the year since we have had the machine we have performed twelve dialyses on five patients. It is a very effective procedure. It is very exciting to place a comatose patient on the machine, watch him awaken, witness the change from the rapid acidotic terminal type of breathing to the normal respirations, and have him feeling much better at the end of the procedure.

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Halothane and Shock*

by

Floyd N. Heller, M.D., Max S. Sadove, M.D., Ronald Rosenberg, M.D.

The administration of an anesthetic to a patient in hemorrhagic, endotoxic, or traumatic shock has been a perplexing problem to the anesthesiologist.

In the past, with the emphasis on maintaining a recordable blood pressure, vasopressor therapy has been used to a great extent. Concomitantly, anesthetics capable of producing an endogenous pressor response — particularly Cyclopropane — have been relied upon to support the blood pressure in surgical patients in shock or impending shock. Not uncommonly, these patients presented a clinical picture of intense peripheral vasoconstriction, slight cyanosis, and cold, clammy skin. In spite of the correction of surgical defects, replacement of lost fluids and antibiotic therapy, the mortality rate has remained relatively high. Voluminous literature has been prepared advocating specific vasopressors for specific shock states. Arguments still rage as to which is the most desirable vasopressor in a given disease. These arguments continue in spite of ever increasing evidence of the deleterious effects of vasopressors on specific organs, as well as the total patient; specifically, decreased renal blood flow with destruction or damage of kidney tissue, focal myocarditis, hepatic disfunction or failure and pulmonary edema.

Ironically, over the past decade, a completely different approach to the pathogenesis and therapy of shock has arisen. This approach is best exemplified in the work of R. C. Lillehei, who has demonstrated the production of shock in experimental animals as a result of the administration of vasopressors without external

* Presented at the Sioux Valley Medical Association Meeting February 19, 1965.

bleeding or trauma. It was subsequently shown that these animals suffered from the loss of plasma and red cells into their tissues (particularly intestine), producing a triad of increasing hematocrit, decreasing blood volume and hemolysis. This same picture is seen in experimental animals and man in shock as a result of either hemorrhage or endotoxemia. Doctor Lillehei believes that the pathogenesis of these shock states involves one common lesion — viz. vasoconstriction. In gram negative septicemia, it is postulated that vasoconstriction is a direct result of the circulating endotoxin, or of a sympathetic response to it. In hemorrhagic shock, the vasoconstriction is due to the sympathetic nervous system's usual response to a discrepancy between the vascular capacity and the circulating blood volume. In the latter instance, if the vasoconstriction persists in spite of replacement of externally lost blood, the shock state will continue as long as vasoconstriction continues. Along with this, the hypovolemia also persists as a component of the shock — again in the face of apparently adequate blood replacement. This discrepancy, according to Lillehei, is a result of the loss of vascular fluid from the micro-circulation into the interstitial spaces. This loss in turn is postulated as a consequence of the specific loci of the vasoconstriction, i.e. primarily venular. Thus, blood is trapped in the capillaries and transudes into the tissues, accounting for the circulating volume loss. Because of significant arteriolar vasoconstriction (closure of precapillary sphincters), an undue percentage of circulating blood is shunted from arterial to venous side of the circulation (via thorofare channels of Zweifach) without passing through capillaries, and thus without contributing to the nourishment and oxygenation of tissues. This lack of tissue perfusion also results in accumulation of acid metabolites (accentuated by the hypoxia) as manifested by a decreasing blood pH and a rising blood lactic level, and rising lactate pyruvate ratio.

On the basis of the above studies, it is immediately apparent that the addition of exogenous vasopressor substances only accentuates this already pernicious syndrome. Consequently, various investigators have suggested the use of vasodilating agents in an attempt to break the chain of events producing what has been previously termed "irreversible shock." By merely preventing the continuation of the vasoconstriction and the administration of plasma and/or blood, the progression of this process may be halted.

In the anesthetic management of the shocked patient, most clinicians have advocated the use of Cyclopropane because of its tendency to support the blood pressure. Price, et al have shown that this cardiovascular effect of Cyclopropane is due to its reflex production via the medullary vasomotor center of a generalized sympathetic discharge resulting in the secretion of Norepinephrine by the postganglionic fibers which causes vasoconstriction.

In light of the newer concepts in the pathogenesis of shock as outlined above, this would tend to perpetuate, if not even produce shock. Consequently, an anesthetic agent, to be consistent with these newer trends, should be ideally sympatholytic (i.e. vasodilating).

Halothane (Fluothane) is an inhalation anesthetic which has dominated the anesthetic scene in the past several years. Included among its many desirable attributes, Halothane blocks the effect of the sympathetic nervous system at many levels. Many investigators have shown that Halothane is a central inhibitor of the sympathetic nervous system (i.e. via the vasomotor center), and that it is also a ganglionic blocker. There is also excellent evidence that supports its role as a peripheral vasodilator.

Regardless of its specific locus of action, it is clinically apparent that in cases where there has been sudden massive blood loss with Halothane as the anesthetic, the patient's skin remains warm, dry with evidence of good peripheral circulation (pink nail beds, mucosae and skin) and a normal to slow, forceful pulse beat. The only sign indicating blood loss is hypotension, which has been suggested by many to be proportional to the blood loss. It should be emphasized at this point that hypotension is not synonymous with shock. It has been recently shown that in hypotensive states, a blood pressure taken in the arm by the usual ascultatory method bears little, if any, correlation with intraarterial (femoral) transducer recorded pressures, especially if there is a peripheral vasoconstriction characteristic of the shock syndrome. The important parameter in this context is peripheral tissue perfusion — not hydrostatic pressure. With adequate perfusion, the patient will not be in "shock" in spite of the blood pressure reading. Halothane, like Thorazine and dibenzylline (both peripheral vasodilators or blocking agents), tend to maintain the

potency of the capillary circulation, and consequently prevent tissue hypoxia.

Summary and Conclusion:

Some of the newer physiologic concepts of shock have been presented. Particular attention was focused on the vasoconstrictor nature of shock and how this is instrumental in the perpetuation of the shock syndrome. Use of vasodilating agents, in particular, the use of Halothane in the administration of anesthesia for the shock or "pre-shock" patient was discussed. It is felt that by preventing the internal loss of vascular fluid into the interstitial area as well as the external loss of blood via the surgical site, one may prevent as well as treat the shock syndrome with Halothane anesthesia in conjunction with adequate fluid replacement.

Elk Point, South Dakota has an opening for an M.D. (General Practice). Office space available. Contact John Murphy, President, Elk Point Community Club, Elk Point, South Dakota.

April 7, 1965

Dear Sirs:

I am writing this note to thank you for the scholarship which you presented to me at our awards banquet. It meant a great deal to myself and my family and I will strive very hard to try to live up to this recognition.

Very sincerely yours,

Larry Ehrichs
Medical Student U.S.D.

South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota

Dear Mr. Erickson:

On behalf of the Western South Dakota Science Fair Committee, I would like to extend to you a sincere "thank you" for your assistance in this year's fair. The continuous increases in quality and quantity at the fair is a direct result of generous support such as you demonstrated this year.

Sincerely,

THE SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY
Duane A. Roehrick
Director of Extension

PRESIDENT'S PAGE



Dear Fellow Members,

From time to time in our State Association, as well as in others, there arise problems of ethics in medical practice. Some of these are caused by ignorance and some by willful misbehavior. The problems caused by willful misbehavior are probably something we can do nothing about except to punish the offending individuals. The problems caused by ignorance are something we can definitely do something about.

Offences against the ethics of medical practice fall into two main categories. Those that are definitely harmful and should be more or less obvious and second the gray area where perhaps more good taste and judgment are involved than actual codified ethics. These are the ones that cause so much ill feeling among practitioners and the general public.

Many states do not have a specific code of ethics in their constitution and by-laws and refer to the "Code of Ethical Conduct in Practice" as specified by the American Medical Association.

I am sure that very few of you have read the text of this AMA publication and in view of this we are taking the liberty of sending to each member of the medical profession in our state excerpts from this publication. We hope you will read and use them as a guide in your practice.

As usual the offending numbers are very few and the instances are rare. Unfortunately they are the ones that get all the publicity.

I would hope that you will keep this forthcoming information in your file and that it will be an aid in the future.

Fraternally yours,
James P. Steele, M.D.
President

This is your

MEDICAL ASSOCIATION

News Notes • Changes • Births • News

Pop's Proverbs

For many people, "going to church" is like washing your hands — without soap.

NEWS NOTES

John H. Lloyd, Jr., M.D., formerly of Mitchell, South Dakota has moved to Arizona.

* * *

George W. Mills, M.D., Wall, South Dakota, long time physician and legislator, was among leading South Dakotans saluted at an honors Convocation at the School of Mines. A certificate of Meritorious Achievement was presented to Dr. Mills at the Convocation.

* * *

There are five new members in the Aberdeen District Medical Society; **W. E. Bormes, M.D., J. I. Hovland, M.D., K. H. Kosse, M.D., David Seaman, M.D.** and **Jerry Eckrich, Jr., M.D. Robert F. Ivers, M.D.** was the guest speaker at the April District meeting.

* * *

Fred D. Leigh, M.D. was elected President of the Huron Chamber of Commerce.

The South Dakota Chapter of the American College of Surgeons held their meeting at the Huron Clinic on February 20, 1965. **K. I. Burns, M.D.** was elected President, **Robert E. Van Demark, M.D.** was reelected Secretary.

* * *

B. T. Lenz, M.D. attended a Closed Medicine Panel by the University of Southern California at Los Angeles County Hospital, Los Angeles, California.

* * *

The Mitchell District Medical Society held a Ladies Auxiliary Appreciation Dinner on March 30th.

WANTED — Younger or older General Practitioner who is tired of solo practice for association with 15 man midwest clinic in town of 30,000. Two Generalists now on staff. We can offer a more comfortable but adequately compensated Family Practice with accessible consultation and off-time coverage. Write Herbert H. Kersten, M.D., Fort Dodge, Iowa.

The 19th Annual Rocky Mountain Cancer Conference will be held in Denver, Colorado, July 16-17, at the Brown Palace Hotel. The two-day session features some of the Nation's distinguished speakers on the Subject of Cancer.

Further information may be obtained by writing Rocky Mountain Cancer Conference, 1809 East 18th Avenue, Denver, Colorado 80218.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

Gov. Nils Boe has appointed **Dr. Robert H. Hayes,** Winner, to a five-year term on the State Public Welfare Commission effective March 22.

Hayes, a native of Huntsville, Ohio, replaces A. N. Brenden, Canton, whose term expired this month.

Dr. Hayes received his M.D. degree from the State University of Iowa in 1950 and came to South Dakota in 1951, and opened a medical practice in Winner, South Dakota.

* * *

The Academy of Psychosomatic Medicine announces the Annual Gold Medal Award contest for the best paper (not over 4000 words) on a clinical or research subject in the field of psychosomatic Medicine.

The deadline date for submission of manuscripts is July 1, 1965.

For full particulars write to Benjamin Schneider, M.D., Chairman, 123 E. Market Street, Danville, Pa.

* * *

A check for $7,204.10 was given April 2, 1965 to the University of South Dakota Medical School by the South Dakota State Medical Association.

Making the presentation at the annual dinner dance of the Student American Medical Association group in South Dakota at the Westward Ho Country Club in Sioux Falls, was **Dr. James P. Steele** of Yankton, President of the South Dakota State Medical Association, acting on behalf of AMA-ERF. Thousands of physicians, their families and friends throughout the country contributed $1,313,559.31 to the Foundation in 1964 for distribution to medical schools.

Accepting the grant was Walter L. Hard, Ph.D., Dean of the State Medical School in Vermillion.

The FDA — Inundated and Deteriorated?

The new law gave the Food and Drug Administration authority over the efficacy of drugs in addition to its original assignment, the safety of drugs. This is a responsibility that FDA was not prepared to assume. In a system of free enterprise, this responsibility belongs to the medical profession alone and not to an agency of the government. Under this new assignment, the FDA has wavered, procrastinated and quaked with indecision on rulings which often they are unqualified to make, owing to the multifaceted areas of medical science and medical practice involved. In addition, the volume of work has become so enormous that the staff has become inundated by its size and complexity. Time lags in getting information from the FDA have appallingly increased. The image of the FDA has deteriorated in the eyes of the pharmaceutical industry with which it is importuned to do its most vital and significant work. — John C. Krantz, Jr., Ph.D., in **Military Medicine,** 130:1, (Jan.) 1965.

Greatest Good for the Greatest Number

Each drug, new or old must be examined in the light of the statistical probabilities of its capacity for effective treatment and its capacity for toxicity. The problems are enormous. Should aspirin, producing a 60 to 70 per cent incidence of gastrointestinal hemorrhages and an estimated 500 deaths per year but saving no lives be permitted? Should a drug responsible for saving 150,000 lives per year and simultaneously responsible for 500 deaths be permitted? There can be no general rules; each situation is a problem to be examined in and of itself; decisions must be made upon a basis of scientific humanism: scientific in the sense that the morality and ethics of impact (the greatest good for the greatest number) is the motivation. — Gustav J. Martin, Sc.D., in **Experimental Medicine and Surgery,** 22:2-3, (June-Sept.) 1964.

For Sale: Hamilton walnut examining table, including instrument table-cabinet, revolving stool, two waste receptacles. Very good condition. Also 60" steel desk and desk chair. Contact L. J. Pankow, M.D., 2201 Pendar Lane, Sioux Falls, South Dakota.

Moville, Iowa, population 1200, is ready for solo or dual general practitioners. More than 200 persons have subscribed more than $40,000 to insure financing a lively practice serving 800 families in a 7 mile radius. Contact Moville Community Development Association, Inc.

Recommended Dosage of Lomotil Liquid to Control Diarrhea

File: Diarrhea

LOMOTIL®

Age	INITIAL LOMOTIL LIQUID DOSAGE*
3-6 mo.	½ tsp. t.i.d. (3 mg.)
6-12 mo.	½ tsp. q.i.d. (4 mg.)
1-2 yr.	½ tsp. 5 times daily (5 mg.)
2-5 yr.	1 tsp. t.i.d. (6 mg.)
5-8 yr.	1 tsp. q.i.d. (8 mg.)
8-12 yr.	1 tsp. 5 times daily (10 mg.)
Adult	2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per average teaspoonful.
Note: After diarrhea is controlled the initial dosage can usually be reduced to meet the requirements of the individual patient.

LOMOTIL® TABLETS/LIQUID

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride ..... 2.5 mg.
(Warning: May be habit forming)
atropine sulfate ..... 0.025 mg.

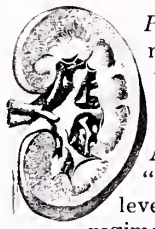
Precautions
Lomotil is an exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Cautions and Side Effects
Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

SEARLE *Research in the Service of Medicine*

One antibiotic superior to Tetracycline Chloramphenicol Streptomycin Kanamycin Polymyxin B Penicillin G against Proteus mirabilis and E. coli



Proteus mirabilis is not only the most common cause of *Proteus* infections of the urinary tract, but such infections are often resistant to other antibiotics.[1-4] According to Anderson *et al.*,[5] "When assessed in terms of serum levels attainable with usual dosage regimens, ampicillin was the most effective drug tested against *E. coli* and *P. mirabilis*." These authors found *Klebsiella-Aerobacter* and *Pseudomonas* organisms relatively insusceptible to ampicillin. With its broad-spectrum coverage of many gram-positive and gram-negative bacteria, absence of toxicity, and slow emergence of resistant strains, PENBRITIN (ampicillin) is a most beneficial and safe drug in treating urinary tract infections—*killing* the pathogens, not just suppressing them.

Dosage: Adults—500 mg. every six hours (higher doses may be required for severe infections). Children—(under 13 years, whose weight will not result in a dosage higher than that recommended for adults) 100 mg./Kg./day in divided doses every six or eight hours for moderately severe infections; 200 mg./Kg./day in divided doses every six hours for severe infections.

Contraindications: (1) Hypersensitivity to penicillin. (2) Infections by penicillinase-producing staphylococci and other penicillinase-producing organisms. *Aerobacter aerogenes*, *Pseudomonas pyocyanea*, and *Proteus morganii* are resistant to PENBRITIN (ampicillin).

Side Effects: Mild effects, such as skin rashes, diarrhea, nausea and vomiting, have occasionally appeared.

Precautions: As with other antibiotics, precautions should be taken against gastrointestinal superinfection. To date, safety for use in pregnancy has not been established.

Supplied: No. 606—Each capsule contains 250 mg. of ampicillin. Bottles of 16 and 100.

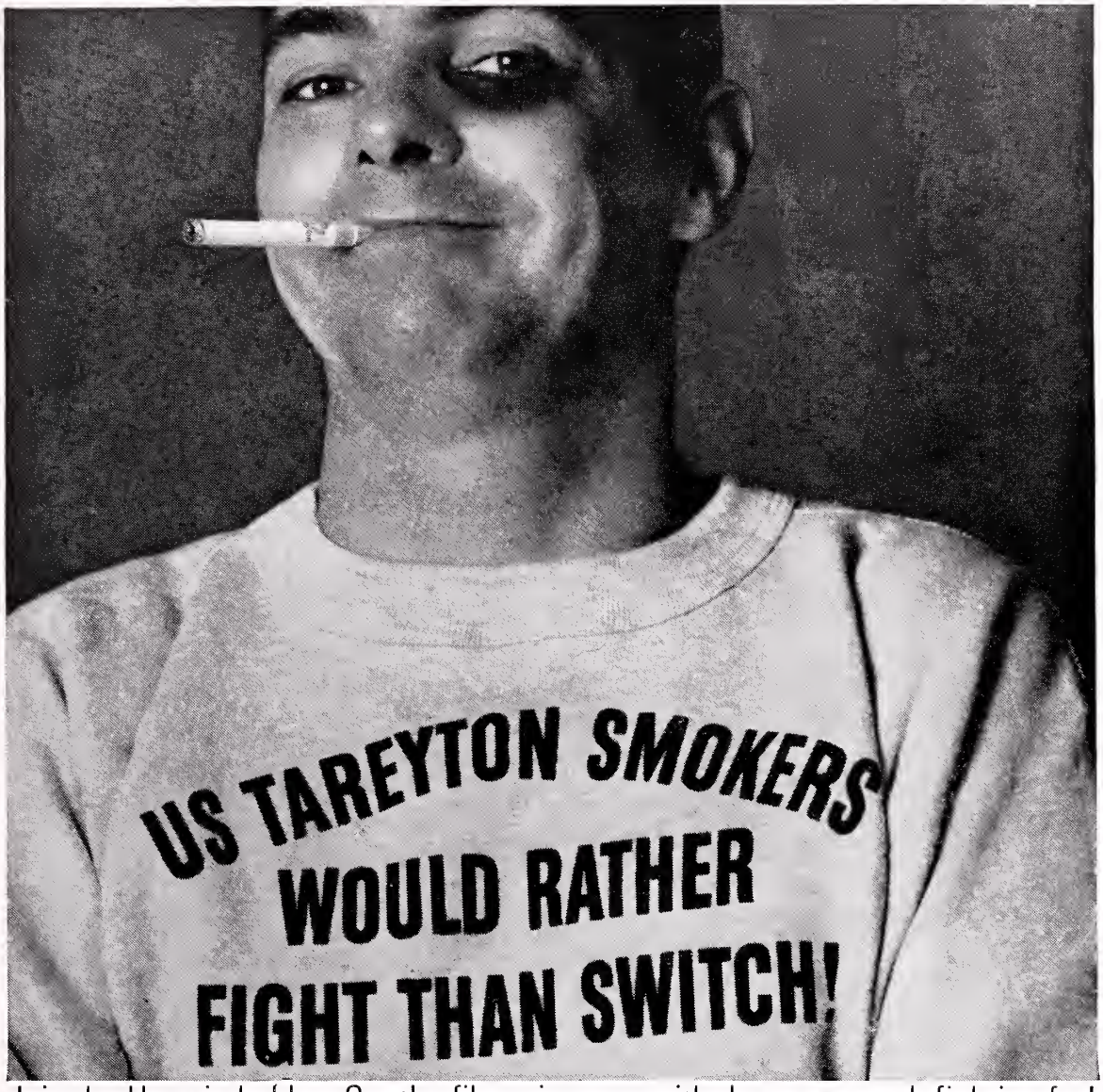
References: 1. Hanson, R. J., *et al.*: J. Urol. *79*:1016 (July) 1958. 2. Middletown, J. E.: Brit. M. J. *ii*:497 (Aug. 31) 1957. 3. Today's Drugs, Brit. M. J. *i*:1475 (May 26) 1962. 4. Brumfitt, W., *et al.*: Lancet *i*:130 (Jan. 20) 1962. 5. Anderson, K. N., *et al.*: J.A.M.A. *187*:87 (Feb. 22) 1964.

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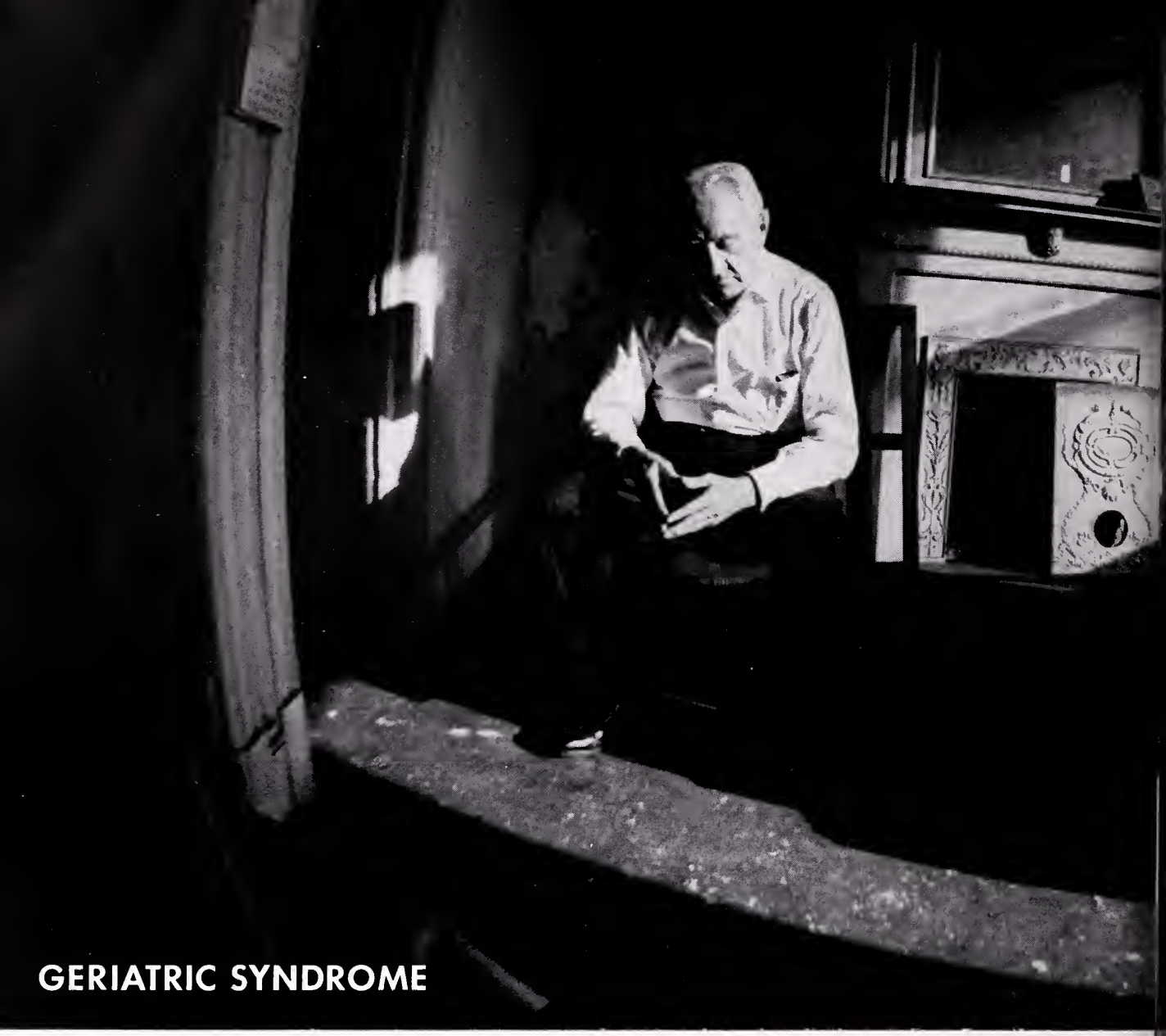
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Dearth of 'Drugs in Search of a Disease'

In my opinion the predicted reduction in "public relations" drugs (those which the pharmaceutical companies kept in clinical investigation without any hope of commercial success) has indeed occurred. Also those interesting drugs that produce important pharmacological changes but have no known therapeutic use — in other words, "Drugs in Search of a Disease" -- are fewer in number and more highly restricted in that fewer investigators are privileged to search for therapeutic uses. But the greatest impact is always the change in one's own research program produced by new regulations. What were these? The impact has been tremendous and has driven us to drink and chain-smoking since the use of alcoholic beverages and nicotine in clinical research have not, **as yet,** been covered by regulations. — Carl C. Pfeiffer, Ph.D., M.D., in **Journal of New Drugs,** 4:6, (Nov.-Dec.) 1964.

* * *

The Most Important Research Animal

Even in the absence of formal experimentation, every doctor who gives a drug, prescribes a procedure or diet for his patient is engaged in an experiment for he observes the result, modifies the dose or procedure as needed, each patient being a unique individual, whose responses will vary from every other patient. Not less research but more research is needed on the most important of all animals — man. — Louis H. Nahum, M.D., in **Connecticut Medicine,** 29:2, (Feb.) 1965.

* * *

Drug Cure for Smoking Habit?

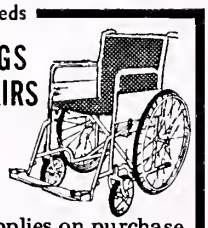
The breaking of the smoking habit may be amenable to a pharmacological agent. In this area too we can treat a condition satisfactorily only when a meaningful theory offers an explanation of the fundamental aspects. I have postulated . . . that the inhalation of burning tobacco leaves creates an irritation of the mucous membranes of the respiratory tract. This physical irritation vies competitively with the vicissitudes of every day living for acceptance by the central nervous system. A suitable counterirritant applied to the throat could then effectively substitute for smoking. — Adolphe D. Jonas, M.D., in **Experimental Medicine and Surgery,** 22:2-3, (June-Sept.) 1964.

Who is Responsible for Drug Safety?

The wise, and presumably safe, use of a drug depends largely on the education, training, experience and judgment of the prescriber. And to an important extent it also depends on the wisdom of the patient as he follows instructions. — Austin Smith, M.D., in **Experimental Medicine and Surgery,** 22:2-3, (June-Sept.) 1964.

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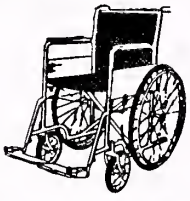
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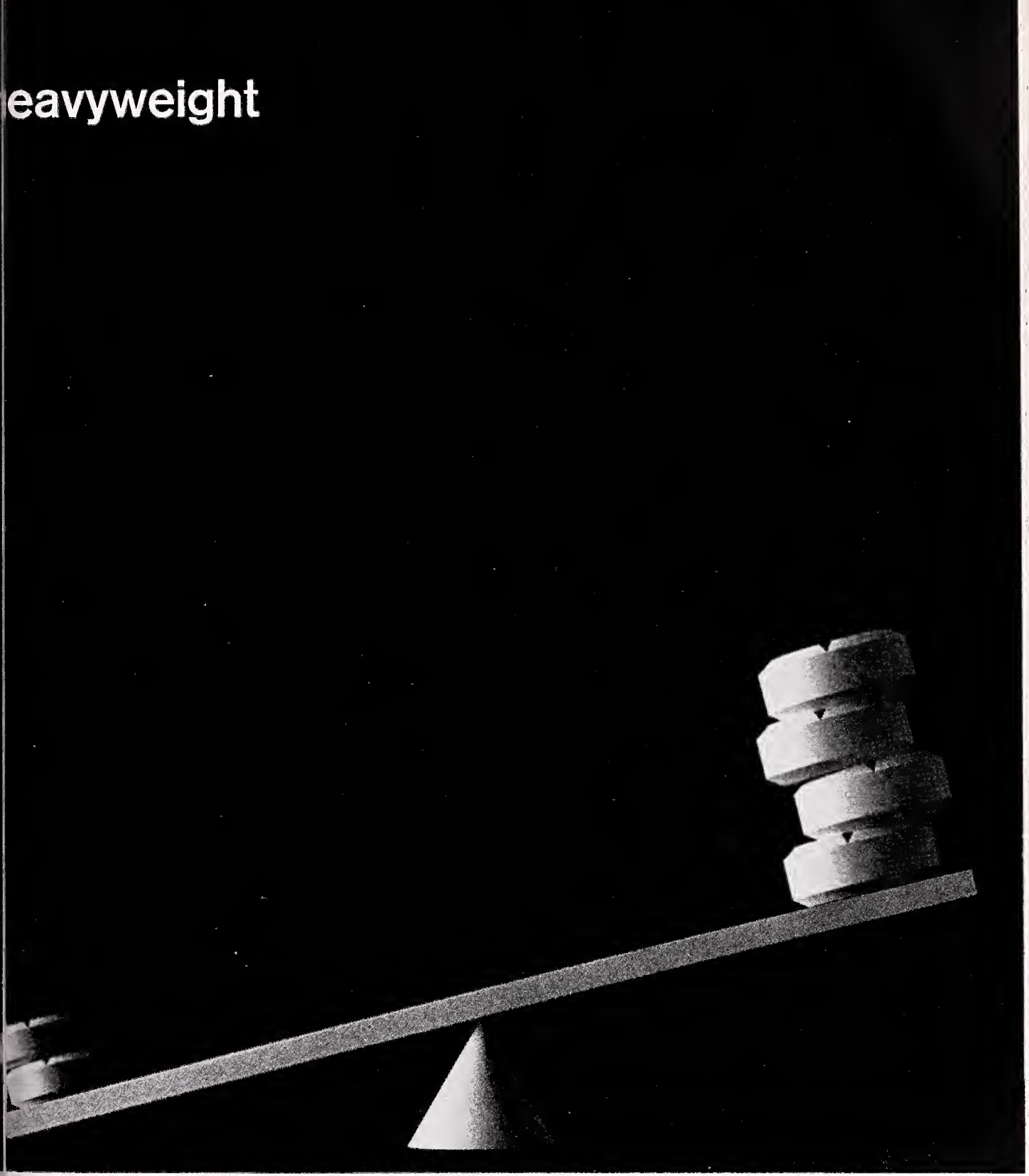
the long-acting diuretic

Indications: Many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

*Swartz, C., et al.: Circulation 28:1042, 1963.

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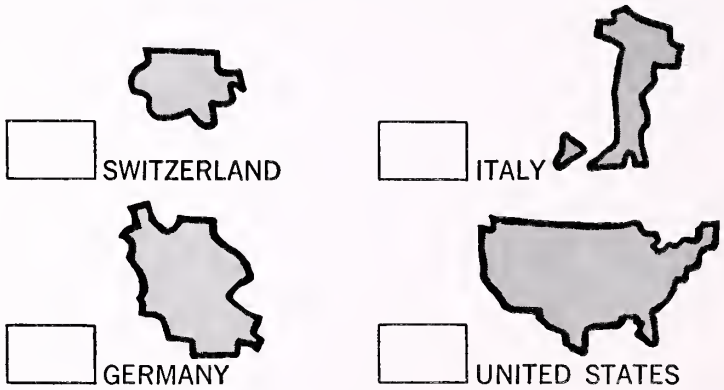
In terms of sodium excretion, 2 tablets of Hygroton, brand of chlorthalidone, are significantly more potent than 4 tablets of chlorothiazide, and also more potent—though not significantly—than 4 tablets of hydrochlorothiazide.* Thus, tablet for tablet, you can expect more from Hygroton, brand of chlorthalidone. Especially since it acts for up to 72 hours. You can prescribe fewer tablets at wider intervals than with any other diuretic.

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Are you as proud of American research as you should be?

Where do the modern drugs you prescribe come from? Between 1941-1964, there were 604 different, new chemical entities made available as drugs to physicians throughout the world. About 74% of these came from the research laboratories of three of the four countries below. If you haven't already done so, take the little quiz. Now, ready? The answers may surprise you. The United States led all the rest with an amazing total of 369 drugs; Switzerland was next with 44, and Germany next with 33. Italy, a country without patent protection for the inventor, had 0. That's a research score Americans can well be proud of.

research quiz For two decades, three of these four countries have led the world in drug research. Of the 604 significant drugs discovered in the world during this period, how many do you think came from each country? (Answer above)



Pharmaceutical Manufacturers Association – 1155 Fifteenth St., N.W., Washington, D.C. 20005

This message is brought to you as a courtesy of this publication on behalf of the producers of prescription drugs.



J. P. Brane—Sioux Falls-Aberdeen



G. P. Gray—Rapid City

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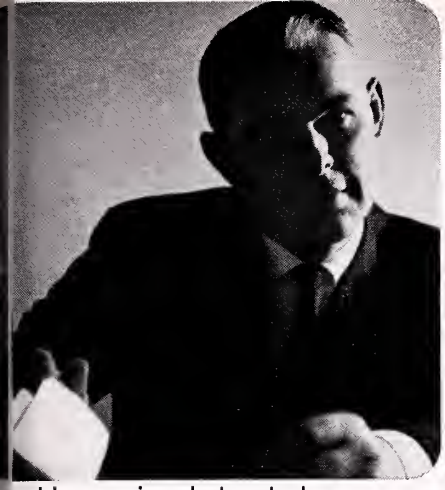
Breast cancer can be highly curable if it is detected early, through regular examinations. Yet, despite all efforts in cancer education and improvements in treatment techniques in the last 30 years,

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While research continues to seek new answers, it is imperative that greater efforts be made to detect breast cancer early and to get women to their doctors when chances of cure are best. That's why the American Cancer Society is encouraging its Divisions across the country to carry out special breast cancer educational programs. Newest of these are demonstration projects in which physicians in a community volunteer one day to giving breast examinations and to teaching hundreds of women breast self-examination.

Breast cancer is one of the major cancer problems which we face and which together, doctor, we must try to resolve through intensified research and educational efforts.

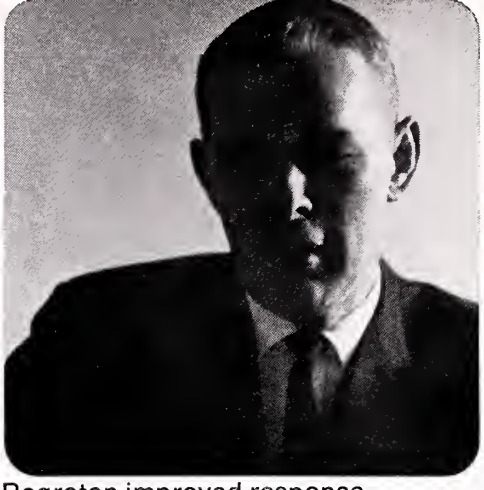
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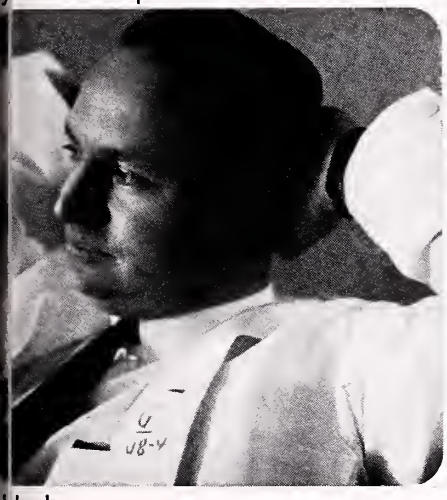
. nd in previously treated
y ertensive patients...



Uh-huh.



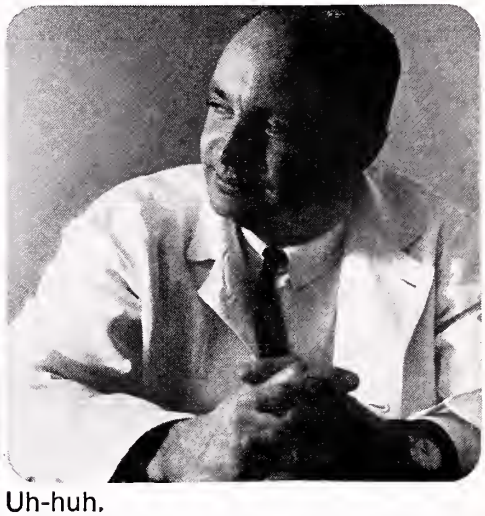
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in 76 out of 80...



-huh.



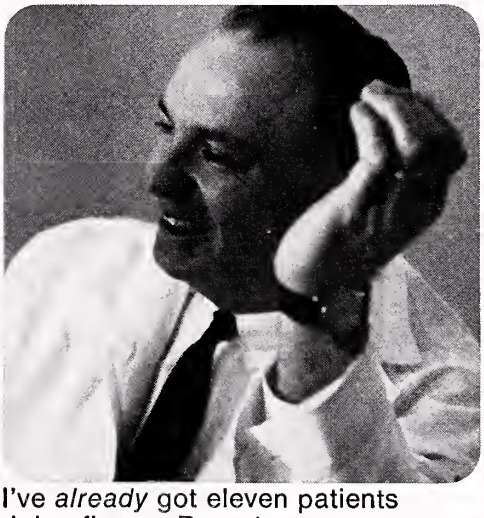
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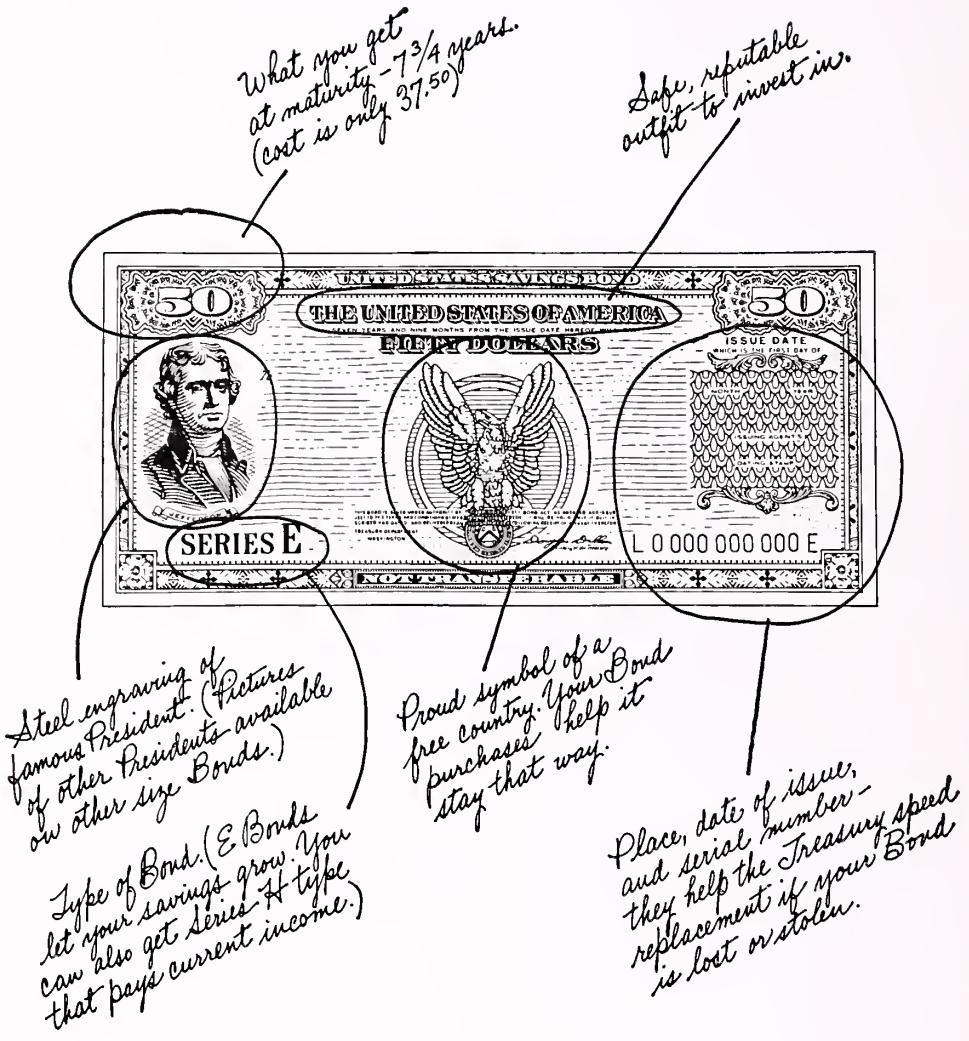
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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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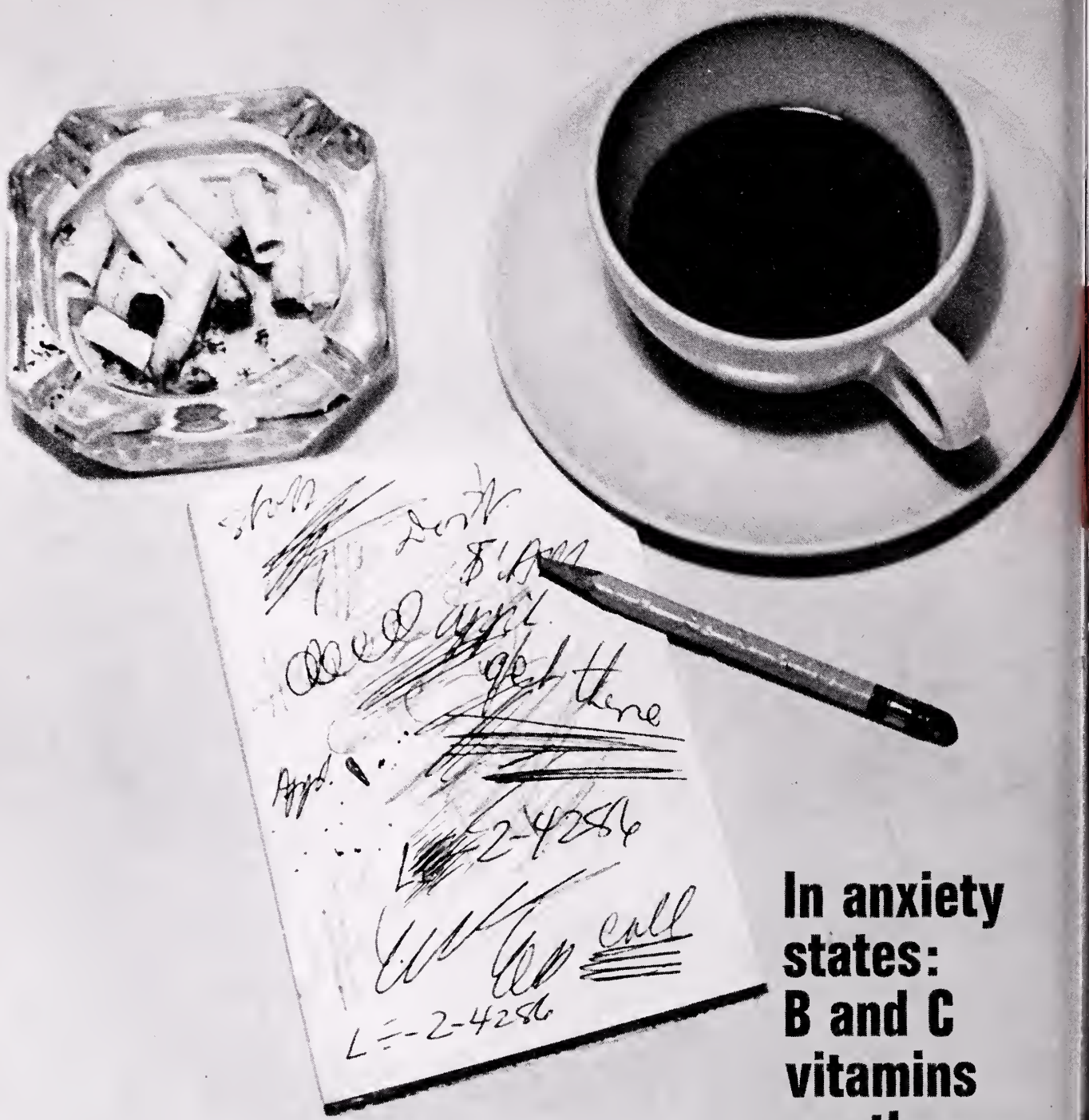
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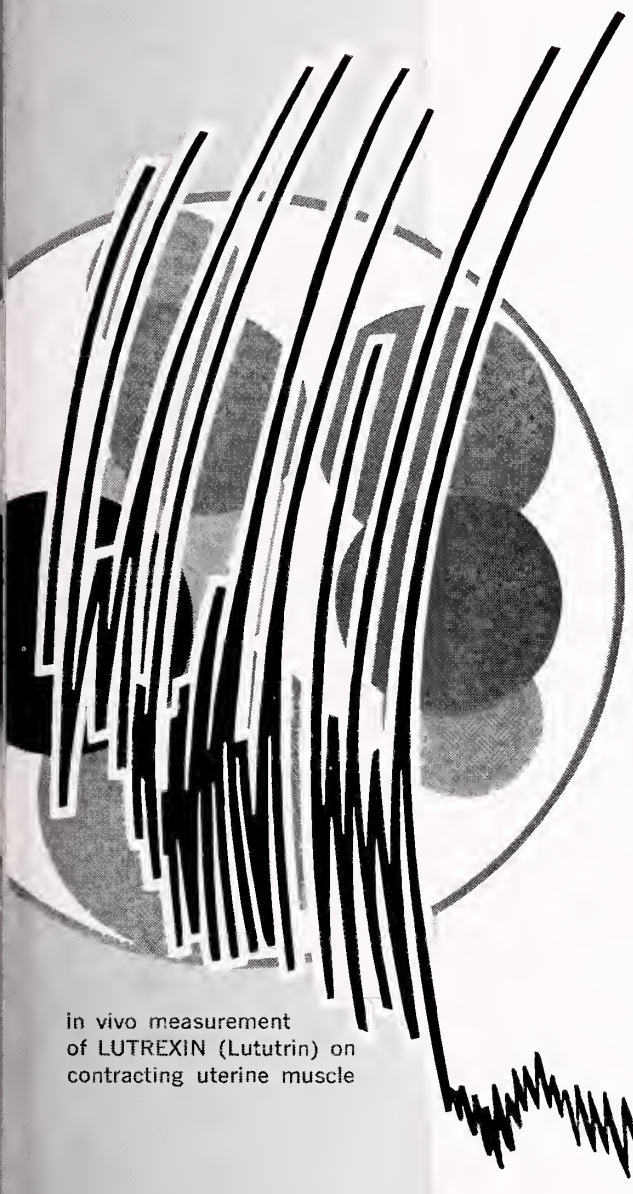
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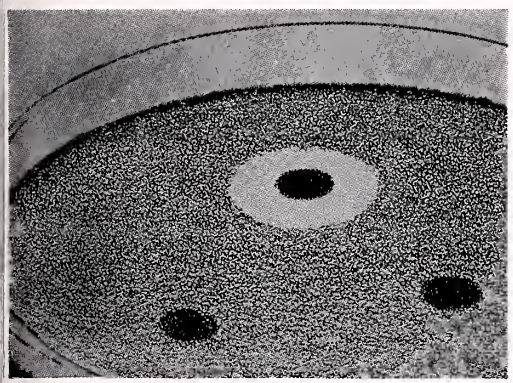
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References: 1. Editorial. Brit. M. J. *ii*:223 (July 22) 1961. 2. Rolinson, G. N., and Stevens, S.: Brit. M. J. *ii*:191 (July 22) 1961. 3. Stewart, G. T., *et al.:* Brit. M. J. *ii*:200 (July 22) 1961. 4. Brown, D. M., and Acred, P.: Brit. M. J. *ii*:197 (July 22) 1961. 5. Batchelor, F. R., *et al.:* Nature *183*:257, 1959. 6. Knudsen, E. T., *et al.:* Brit. M. J. *ii*:198 (July 22) 1961. 7. Doyle, F. P., *et al.:* Nature *191*:1091 (Sept. 9) 1961. 8. Acred, P., *et al.:* Brit. J. Pharmacol. *18*:356, 1962. 9. Harrison, P. M., and Stewart, G. T: Brit. J. Pharmacol. *17*:420, 1961. 10. Editorial. Lancet *ii*:723 (Oct. 5) 1963.

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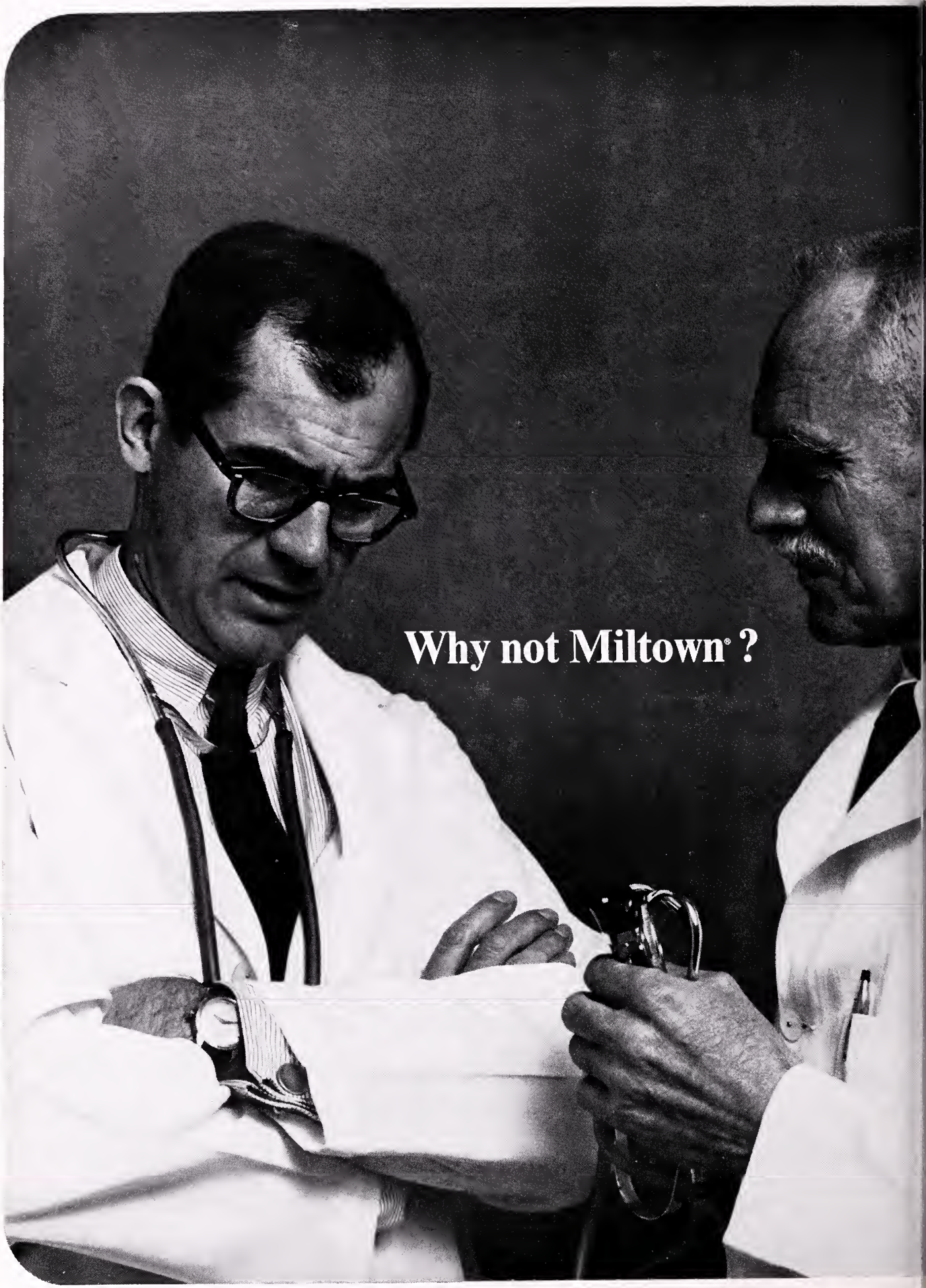
Note: The physician should be fully aware of dosage, precautions, side effects and contraindications as contained in the complete prescribing information.

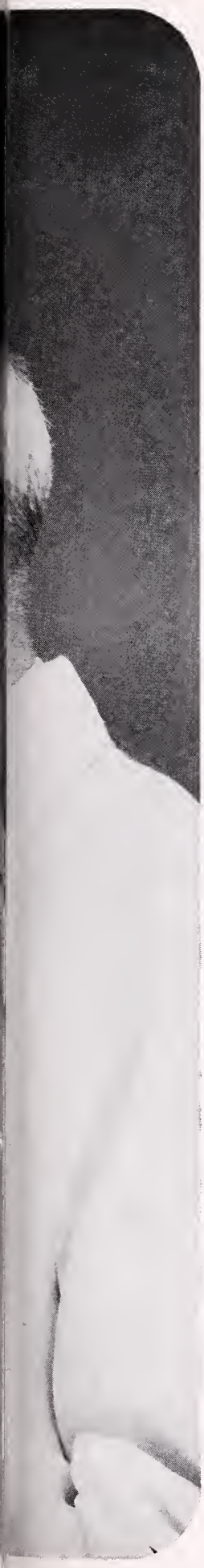
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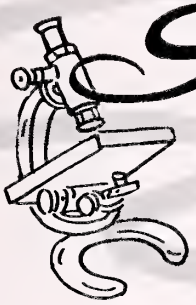


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Scientific PAPER

*URINARY TRACT INFECTIONS IN CHILDHOOD

by

William T. Bowles, M.D.*

The most common cause of fever in childhood is infection of the upper respiratory tract. This is followed closely by bacterial infection of the urinary tract. In recent years, the serious nature of urinary infections has become more widely appreciated with the renewed interest in the diagnosis and treatment of adult pyelonephritis. Many investigators now feel that chronic adult pyelonephritis with renal failure owes its origin to repeated attacks of urosepsis in childhood.

The magnitude of the problem is illustrated by the fact that in the past five years, one out of every twenty admissions to the St. Louis Children's Hospital was for the diagnosis and treatment of infection of the urinary tract. In over a third of the patients admitted for the study of urinary infection, some form of obstructive uropathy was diagnosed and treated.

Unfortunately, the end result of severe urinary tract infection and obstruction is seen too frequently. In some cases, a child is first seen by the physician when he is already severely uremic and there is little hope for cure. This situation may occur with few definitive signs or symptoms. Enuresis, for example, should not be ignored and attributed to nervousness or immaturity. It may be the only clue to the diagnosis of a severe urinary tract disorder.

The cause of urinary infection in many cases is obscure. In some patients it is obvious, after thorough investigation, that the infection is directly secondary to obstruction somewhere in the urinary tract. The majority of obstructions are due to some form of congenital malformation. The causes may be classified roughly as either mechanical or dynamic, the latter being secondary to neurogenic disease. Campbell[1] has listed some thirty-two causes of obstruction. I shall discuss the more common ones,

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* Presented at the Sioux Valley Medical Association Meeting February 18, 1965 at Sioux City, Iowa.

beginning with those of the upper urinary tract and progressing downward.

Uretero-pelvic junction obstruction, producing hydronephrosis, is usually secondary to a congenital stricture or to an aberrant blood vessel coursing over the upper ureter. This affliction is more often found unilaterally and may remain silent until secondary infection supervenes. Ureterocele, which frequently is bilateral, may produce upper tract dilation and urinary stasis. Intrinsic disease of the ureter may be responsible for obstruction and is seen in such systemic disorders as Hirschsprung's Disease and amyotonia congenita.

The most frequent sites of obstruction responsible for recurrent urinary tract infections in children are at the bladder neck or below. Vesical neck obstruction is caused, primarily, by contracture of the bladder neck. This may be associated with some form of neurogenic dysfunction and is noted commonly in conjunction with spina bifida occulta of the fifth lumbar or first sacral vertebrae. Congenital urethral stricture is rare, however, meatal stenosis is one of the most common forms of urinary obstruction in both males and females.

The symptoms of bladder neck and urethral obstruction are frequency, hesitancy, a small, slow stream, enuresis and rarely urinary retention. In some cases, attention is brought to the urinary tract by the presence of a suprapubic mass. Some mothers will note that the child will strain during urination, and others may note a small weak stream.

Urinary infection is more common in girls. This fact is attributed to the respective length of the urethra and supports the theory that the main route of infection is ascending. The ratio between the sexes remains close to 10:1 in most series. In males, the infection is almost always associated with some form of obstruction, and any **first** infection should be investigated thoroughly. In girls, infections are frequent, and, in many cases, a thorough work-up may disclose no abnormality. However, with a second or third infection in girls, it is mandatory that the child's urinary tract be examined by means of intravenous urography and voiding cystourethrography. In many cases, these examinations alone will be sufficient to uncover significant pathology, and can be performed easily by any physician with access to x-ray equipment. If significant pathology is demonstrated, cystoscopy may then be utilized to clarify further the diagnosis.

The intravenous urogram is performed with very little risk in children. Much information can be gleaned from a carefully performed examination. The size of the renal shadow should be noted and the calyces inspected carefully for evidence of the scarring of chronic pyelonephritis. The ureters may give a clue to the presence or absence of obstruction by their size. Garrett[2] has described a characteristic "ripple" sign which is seen frequently in ureters with incompetent uretero-vesical valves and vesico-ureteral reflux. A voiding film at the conclusion of the examination will yield valuable information about the bladder neck. Ballooning of the posterior urethra may be due to posterior urethral valves in the male. A full urethra down to the meatus in the male will suggest meatal stenosis, the most common obstructive lesion in the male child. Following the voiding film, the patient, if toilet trained, should be taken to the bathroom and instructed to void. The post voiding film will show if there is any residual urine. All this information is obtained without instrumentation of the urinary tract.

If any abnormalities are seen in the urogram, the physician may then proceed to the retrograde cystogram. A sufficient amount of time should have elapsed to make sure that the upper tracts are cleared of contrast material. The cystogram is then performed through an indwelling Foley catheter, with contrast material being allowed to run into the bladder under the influence of gravity and not more than 25 centimeters of water pressure. When the child notes bladder fullness, the inflow is stopped, and a film is obtained immediately. If fluoroscopy is available, the ureters may be monitored during the filling to demonstrate the presence or absence of reflux and whether it occurs early (low pressure) or late (high pressure) in the filling. Voiding films are then repeated when the catheter is removed and are usually superior to those obtained following the excretory urogram because of increased density of contrast material. If reflux is demonstrated, a full urologic investigation is warranted with cystoscopy, calibration of the urethra, and perhaps, some surgical procedure to correct obstruction and/or vesico-ureteral reflux.

In recent years, it has become more widely recognized that the vesico-ureteral valves are always competent in the absence of disease. Lich[3] performed cystography on twenty-six consecutive normal newborn infants and found

not one single incidence of reflux in the entire group. None of the children examined developed urinary infections following the procedure. This confirms the earlier work of Campbell[1] who performed cystograms on 772 children and found reflux only in those children with coexistent uropathy (12 per cent).

The presence of reflux is now considered to be a sign of serious urinary tract dysfunction. In males it is almost always associated with some form of bladder neck or urethral obstruction and is usually seen together with significant residual urine. In females, it may be difficult to account for reflux on the basis of obstruction. The reflux may be due to congenital abnormality of the valve itself or of the bladder musculature.

Ambrose[4] studied a group of seventy-three children who demonstrated reflux on cystography. All of these children had recurrent infection. The average age was four years. Female patients comprised 82 per cent of the group, and in these no evidence of urethral or bladder neck obstruction was found in 54 per cent. The logical conclusion in the latter group was that infection was perpetuated by the refluxing ureters, or that the infection caused the reflux. Hutch[5] feels that reflux perpetuates infection because in a way it produces residual urine. The bladder has an innate defense mechanism for clearing the urine of bacteria. This is only operative when the bladder empties itself completely except for the thin film of urine coating the mucosal surface. Thus, when the patient has residual urine due to obstructive uropathy or to the urine which drains down the ureters following the act of voiding associated with reflux, the growth of bacteria is perpetuated and the body cannot cope with the infection in the normal manner and needs the assistance of antibacterial drugs. Sunshine[6] has studied bladder infection and reflux in the laboratory and has found that instillation of bacteria into the bladders of animals not exhibiting reflux rarely, if ever, leads to pyelonephritic lesions in the kidney, while in a group of animals in whom reflux was produced by a surgical procedure, thirteen out of nineteen animals developed fulminating pyelonephritis in the kidney involved.

The diagnosis of obstruction of the urinary tract may be elusive. For many years, the relatively common female meatal stenosis was missed entirely because of inadequate techniques of examination. It is quite easy to dilate a female urethral meatus during the introduction of a sound or cystoscope and not be aware of any stenosis. Lyon[7] has thrown light on this problem by repopularizing the use of the bougie a boule (figures 1 and 2). This instrument is introduced into the female urethra before dilation or cystoscopy and will detect the area and degree of stenosis should any exist. Cystoscopy will give further evidence of obstruction and may disclose the presence of urethral valves in the male, a hypertrophied bladder neck, or in rare cases, obstruction from an enlarged prostate or veru montanum. Indirect evidence of obstruction will be gained by noting the presence of trabeculation of the bladder wall.



Figure I
Graduated Set of Bougies a Boule

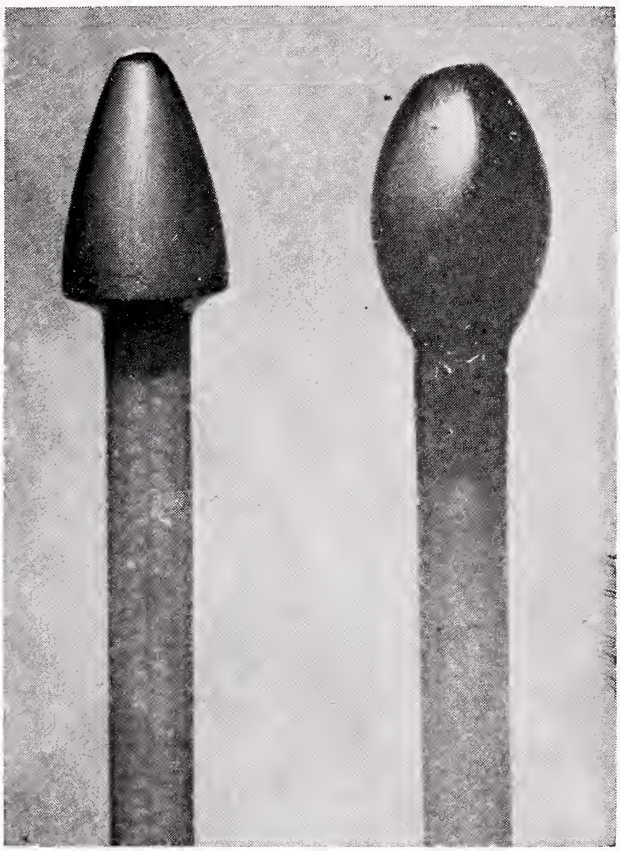


Figure II
Close up view Bougie a Boule

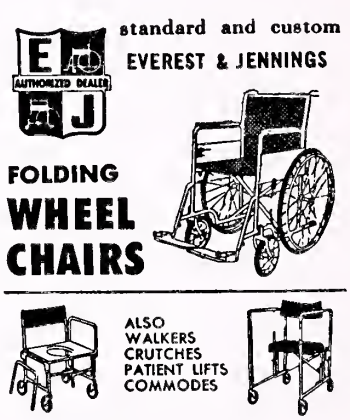
The treatment of the various degrees of urinary tract disability will depend on the pathology observed and the degree of decompensation of the bladder and upper tract collecting system. In mild cases of obstruction such as early meatal stenosis or slight bladder neck obstruction, simple dilation may suffice, and may become unnecessary as the child and his or her urethral diameter increase in size. In those children with beginning decompensation of the bladder showing early vesico-ureteral reflux and trabeculation of the bladder, some form of operative relief of the obstruction such as transurethral resection or suprapubic Y-V plasty of the bladder neck may be indicated. In the presence of low-pressure reflux, it is the feeling of many authorities[5, 8] that operative correction of the incompetent uretero-vesical valve is mandatory if the kidney is to be saved from gradual deterioration from recurrent infection. Many operative techniques have been devised for this purpose, and all consist of replacing the ureter in its course through the bladder wall to obtain a natural oblique direction.

In cases which reach the urologist after severe decompensation of the urinary tract has occurred, there is little if any chance to obtain a normally functioning lower urinary tract, and some form of urinary diversion may be the only solution to the child's problem. In past years, ureterostomy or nephrostomy drainage has been employed, but the best solution to the problem at the present time seems to be diversion of the ureters into an isolated segment of ileum, the urine then draining continuously into a bag, cemented to the abdominal skin. This procedure has been performed on more than fifty children at St. Louis Children's Hospital in the past ten years, and except for a few isolated instances, has resulted in effective cessation of further renal deterioration.

In conclusion, it is well to remember that urinary tract infection in children is often the precursor of severe renal disease in adult life. If the infection is not eradicated promptly with treatment, it may be because of the failure of the physician to recognize underlying obstruction of the urinary tract or neuromuscular dysfunction of the bladder. Since the advent of broad spectrum antibiotics, it is usually possible to eradicate a single episode of infection. Unrecognized persisting obstruction may lead to the gradual deterioration of the child's upper urinary tract. This fact must be kept constantly in mind, and any single infection in males, and any second infection in females should demand a careful urologic investigation. The minimal work-up in these cases should consist of physical examination, urinalysis and culture, and intravenous urography with voiding and post voiding films. These tests can easily be performed by any physician. If pathology is suspected, then cystography and cystoscopy may be added. If this routine is followed faithfully in all patients presenting with infected urine, definitive treatment will be initiated at an earlier age when there is still the possibility of a favorable ultimate prognosis.

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*TREATMENT OF THE MENOPAUSE

by

Leon S. McGoogan, M.D.*

In trying to define the term "geriatrics" as related to either sex and to the female especially, one is faced by a number of confusing circumstances. How old is "old"? How old does one have to be to become classified as a geriatric individual? Various students of the problem have tried to set the age at 62 years, an age which more or less corresponds to the age at which one can derive the benefits of the Social Security Program, and an age at which one can contemplate mandatory retirement in many industries at that age, or within a few years more time. Like Dr. Eleanor Black of Winnipeg, I am personally of the opinion that whatever age is selected as "old" or geriatric, "the closer I get to it the further it recedes into the future."

If a chronological age is selected as a criterion you are soon forced to recognize the fact that individuals vary greatly in their aging process — both mentally and physically. In your daily contacts with the general public and with patients in particular, you will frequently see women who look and act "old" and yet are only in their **fifties,** while there are others who are alert mentally and active physically with good physical health in their **eighties.** The first patient has thinning gray hair, dry wrinkled skin, dull eyes, dull facial expression; she is bent by the cares of her years and stooped by the ravages of osteoporosis. She is withdrawn in manner and disassociated from her friends, family, and environment. Her counterpart may have graying hair — which is either tinted or concealed by a wig — her skin still has a youthful look; her eyes are bright and sparkling; she is sprightly in manner and walk; interested in and usually a good judge of people, and oft times of horse flesh as well; interested in the daily activities of her family and friends; man-

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* Presented at the Annual Meeting of the Sioux Valley Medical Association February 19, 1965, at Sioux City, Iowa.

ages her own domicile; and her own finances. She sometimes does the latter very well, much to the dismay and chagrin of her financial advisors.

Should the climacteric be used as a guide? That time in a woman's life span during which decreasing ovarian activity becomes manifest is usually known to the lay people and the professional people alike as the menopause. It really should be called the climacteric because menopause literally means cessation of the menses and this is only one of the symptoms of decreasing ovarian activity. Graying hair; dry skin; appearance of hirsutism; atrophy of the breasts; atrophy and relaxation of the structures in the generative tract; obesity, perhaps with the matronly aspect; osteoporosis with the "dowager's hump," various vaso-motor phenomena of hot flashes, flushes and cold sweats; nervous irritability and oft times depression; all of those and some others may appear as a result of ovarian failure whether it is the result of natural aging phenomena or as a result of surgical extirpation of the ovaries or following heavy dosage of deep X-ray therapy or irradiation to the pelvis.

And at what age? Anywhere from 35 to 55 as a natural phenomena and perhaps earlier in some instances as a result of surgery or irradiation. If the onset of the climacteric is the onset of the aging process—the onset of geriatric age in other words — "how old is old"?

Practicality here becomes a virtue and the aging process initiated by cessation of ovarian function — the climacteric — could be and probably should be designated as the beginning of the geriatric age in the female.

The laboratory can be of aid in determining the time and extent of the cessation of ovarian function. The examination of smears of cells of the vagina for the cornification index is of considerable practical value in determining estrogen levels. In the presence of adequate estrogen there is a predominance (85%) of superficial cornified cells in the smears and only a small number (15%) of parabasal and intermediate cells. While in estrogen deficiency the reverse is true.

Is there any difference in estrogen failure as a result of the manner of the failure — i.e., normal physiologic failure, surgical castrate failure, or irradiation failure. Sandmire[5] in a report given at the District VI meeting of the American College of Obstetricians and Gynecologists in Winnipeg in October, 1964, stated that there was no difference in residual estrogen production as determined by the vaginal smear technique in the three groups. He also stated that after two years from the date of the climacteric all three groups showed good residual estrogen effect in approximately 20 percent of each group and estrogen failure in 80 percent indicating that estrogen may be produced in the ovary if present, or in other glands of internal secretion such as the adrenal. Extraneous factors may be present at the time of the ovarian failure which may enhance the severity of the symptoms. The physiologic climacteric usually occurs in the late fifth or early sixth decade of life — at a time when the children are more or less grown, are failures or successes and require less time and supervision; a time of success or failure of the husband in the business or professional world and he shares less of his business worries with her; a time when there may be lessening of sexual drive on the part of the husband — and too often this is misinterpreted by the wife as a lack of interest in her as a woman and perhaps interest in another woman; a time when she has time on her hands and doesn't know what to do with it except worry that she no longer is needed as a mother, a confidante, or a wife. She examines herself and what does she find? Too often she sees only a failure, and perhaps she has been a failure. But there are many instances in which, when she examines herself, she should see a woman who has done a good job as mother and wife, a woman who now for the first time in many years can have time for herself, time to do what she has wanted to do in the way of hobby or civic duty, time to re-establish her rapport with her husband as a companion — time to enjoy her friends and their hobbies, time to put on a new personality and a new life. If she cannot see this side of the climacteric picture, then she is likely to be depressed, nervous, and an object of self pity.

How can one treat the climacteric? First with sympathetic understanding of the emotional and aging problems and careful guidance. This will require a careful review of her life and her relationship with her family — both in the past and in the present — a review of her hopes for the future and her fears and anxieties — a review of her estimation of herself, what she has accomplished, hoped to do but undone, and what she expects of life and living in the future. The use of tranquillizers, mode elevators, and other medications is not the total answer to these problems. Conferences with the husband and members of her family may be necessary as an

aid in directing her activities and encouraging outside activities. Second, with correction of those physical ills not a part of the climacteric; that is, hypertension, diabetes, cardio-renal disease, atherosclerosis, gout, etc. Third, the management of the individual symptoms of the climacteric by judicious use of hormone therapy. Numerous individuals have suggested recently that all women should receive hormone therapy with the onset of the climacteric — that the climacteric is not a physiological change but a pathological one, and that the ravages of estrogen deficiency should be treated with estrogen replacement as insulin deficiency is treated with insulin replacement. There certainly would be no argument that estrogen deficiencies manifested by senile vaginitis should be treated with estrogen, that hot flashes and flushes that are disabling should also receive estrogen — that osteoporosis may be treated with estrogen and calcium. As to whether or not estrogen should be routinely used prophylactically to reduce skin changes, breast atrophy, atrophy of pelvic supports, lessen nervousness, and decrease the incidence of coronary disease by the prevention of atherosclerosis may be open to discussion. There seems to be a rising literature in its favor.[1, 2, 3, 6, 7]

In those cases in which the estrogens are indicated, what medications may be used?

1. **Vaginitis:** Personally, I prefer Premarin creme in the treatment of senile vaginitis — one gram of the creme containing 0.625 mgm. of Premarin inserted into the vagina nightly for seven nights, then once or twice a week thereafter. However, oral medication in the form of Premarin 1.25 mgm. daily for 21 days then skipping seven days and repeating with the same or smaller dosage until the desired effect is acquired may be used.

2. **Osteoporosis:** For the treatment of proven osteoporosis, Henneman recommands Premarin 1.25 mgm. daily for four weeks, then skip one week and increase the dosage of Premarin to 2.5 to 5 mgm. daily in subsequent cycles. Uterine bleeding will probably occur with these larger dosages if the uterus is present. If prolonged or irregular bleeding occurs, Provera, 10 mgm. daily for five days will cause desquamation and bleeding will cease. If it doesn't cease, then a diagnostic curettage is required. Henneman[3] is not impressed by the recommendation of a high calcium intake.

3. For all other indications, oral medication is used. Stilbesterol, 0.5 to one mgm. daily or Premarin, 0.625 to 2.5 mgm. daily are the preferred estrogens. The dosages chosen for the individual patient should be enough to allay the symptoms short of uterine bleeding if the uterus is present. It has been suggested that combined estrogen-progesterone therapy may be a better type of therapy in long term medication, particularly if the uterus is present, in the hopes of minimizing a possible carcinogenic effect.

Androgen therapy may have a place in treatment of post menopausal females when androgen production is low or where estrogens may be contraindicated as in cases of malignancy of the breast or pelvis and the tumor is estrogen dependent.

Injectable medication, I personally believe, should be reserved for those rather severe cases of estrogen deficiency which perhaps would get a quick beneficial dosage as an initial therapeutic measure. In all instances, the medication chosen should have a definite indication — and those women with high indexes of cornification of the vaginal cells would seem to be a group which would not necessarily benefit from medication. This group should be eliminated from the patients of those physicians who advocate administration of estrogens to all climacteric females, regardless of age or symptomatology.

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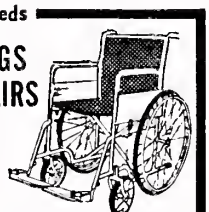
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*THE DIFFERENTIAL DIAGNOSIS OF HEMATURIA

by

William T. Bowles, M.D.*

* From the Department of Surgery, Section on Urology, Washington University, School of Medicine, St. Louis, Missouri.

* Presented at the Annual Meeting of the Sioux Valley Medical Association February 19, 1965 at Sioux City, Iowa.

To the patient, the sudden appearance of gross hematuria is considered an ominous sign, and he usually seeks medical advice and treatment as soon as possible. Microscopic hematuria, on the other hand, is discovered only during the course of a routine medical examination and may go undetected for years. Both forms of hematuria, however, are of great significance and demand thorough investigation by the utilization of the laboratory, radiographic and endoscopic means available to the practitioner.

Urine with a red color does not always contain blood. Pyridium will give the urine an orange-red color, and if the patient is not warned, he may suspect urinary hemorrhage when being treated with the drug. Certain children are unable to hydrolize anthocyanin, the red compound found in beets, and will excrete brilliant red urine following the first addition of beets to the diet. Red urine may also be caused by hemoglobinuria, and this fact can be confirmed by the absence of red cells in the urinary sediment and a strongly positive benzidine test. The actual color of urine containing red cells will vary according to the amount of blood and the pH of the urine. The color will be bright red in an alkaline urine, but with an acid pH the color of hemoglobin becomes a brownish red best described as a rusty or smoky color.

A clue as to the source of the bleeding may be uncovered by carefully questioning the patient. Initial hematuria usually indicates a lesion somewhere in the urethra. This is especially true in males when blood is noted at the ure-

thral meatus between episodes of micturition. Terminal hematuria most often indicates an inflammatory lesion in the posterior urethra in males or of the trigone and base of the bladder in females; this symptom is usually accompanied by urinary frequency, dysuria and urgency — thus suggesting an inflammatory lesion. Painless gross total hematuria is usually associated with more serious disease than initial or terminal hematuria. Leader and Stell[1] state that urologic investigation of patients with painless gross total hematuria will reveal neoplasms in at least twenty per cent of the cases. Attacks of renal colic in association with hematuria point to calculus as the causative agent, however, intraureteral blood clots may mimic the signs of ureteral calculus. Long stringy clots usually are formed in the ureter and indicate renal or ureteral bleeding.

Investigation of the site of bleeding will reveal the bladder or the urethra as the source in approximately sixty per cent of patients. In males, prostatic bleeding is the most common single source of hematuria and is more often associated with benign prostatic hypertrophy than malignant disease of the prostate. In females, acute bacterial cystitis is seen most commonly as a cause of urinary tract bleeding. In children the most common causes of gross hematuria in order of frequency are acute nephritis, urinary infection, obstruction (meatal stenosis) and tumor.

Laboratory examination of the urine will aid in the diagnosis. Even in grossly bloody urine the presence or absence of infection may be ascertained simply by utilization of the methylene blue smear. Red cells stain poorly with methylene blue, and the presence of excessive numbers of deep staining polymorphonuclear leukocytes and bacteria will point quickly to the diagnosis of infection. Further investigation can then be postponed until adequate therapy for the infection has been instituted. If the examination of the urine discloses only red blood cells with the normal ratio of white blood cells, cystoscopy can then be performed safely while the patient is bleeding. This is advantageous as the site of bleeding may be located in the bladder or urethra, and if the bleeding is from the kidney or ureter, the side responsible may be identified by observing the bloody spurt of urine from the ureteral orifice.

The glomerulus is the site of bleeding in most cases of hematuria secondary to systemic disease such as bacterial endocarditis, hemorrhagic purpura, leukemia and bleeding associated with glomerulonephritis or other collagen diseases. In recent years an important cause of hematuria has been toxic overdosage of anticoagulant drugs in the therapy of coronary arteriosclerosis and cerebrovascular disease. A check of the prothrombin level will substantiate the diagnosis. The patient should be withdrawn from the drug, and when prothrombin times are approaching normal, pyelography and cystoscopy should be performed. It is not safe to blame the bleeding on the drug alone, as in a few of these cases, we have discovered a tumor of the bladder or kidney which had been asymptomatic before but had started bleeding when the prothrombin level was depressed. Another systemic cause of hematuria is sickle cell disease in its various manifestations. Sharpe[2] has studied a group of 44 Negroes with hematuria secondary to sickle cell hemoglobin disorders. Interestingly, patients with true sickle cell anemia (homozygous S-S hemoglobin) rarely show hematuria as a symptom of their disease while crises and priapism are frequent in this group. The largest group of patients have A hemoglobin as well as S hemoglobin (sickle cell trait). This SA group contains the highest percentage of urinary bleeders. Hematuria is also frequently seen with the rarer SC disease. For some as yet unexplained reason, the majority of these patients show bleeding from the left kidney. Associated with the bleeding is early loss of concentrating ability due to hemosiderin deposition and subsequent reaction in the medullary areas of the kidney. Again, a patient with this disease should have a complete investigation at the first sign of bleeding, as a completely different source of bleeding may be discovered.[3]

Intrinsic disease of the kidney is often responsible for gross hematuria. It is estimated that thirty per cent of patients with renal tuberculosis bleed at some time in the course of their disease. Renal stones are frequently associated with hematuria because of mechanical irritation of the renal pelvis and calyces and the associated infection and stasis seen with calculus disease. Other renal diseases which may be responsible for hematuria are polycystic disease, sponge kidney, pyelonephritis, renal vein thrombosis, renal arterial occlusion, radiation nephritis, and congenital obstruction of the uretero-pelvic junction.

Trauma to the kidneys may produce hematuria, the severity depending on the amount of injury. Mild contusions may result in gross

hematuria, but characteristically produce only microscopic hematuria such as is seen in boxers and football players following strenuous physical activity. Severe injuries resulting in tearing of the renal parenchyma may be associated with marked hemorrhage both into the urinary collecting system and into the perinephric area. In the absence of shock, pyelography will aid in determining the severity of injury in cases of trauma.

The intravenous urogram is certainly the most important single test in diagnosing upper urinary tract bleeding in general. A filling defect in the renal pelvis or calyx may indicate a transitional cell carcinoma of the renal pelvis or calyx, a lesion particularly likely to bleed early in its development. Filling defects may be caused also by uric acid calculi and blood clots; and, therefore, other appropriate diagnostic tests such as urine uric acid, pH, and urinary cytology should be performed before treatment is contemplated. Frequently, a filling defect seen during the active bleeding episode may be gone in three or four weeks, thus suggesting a blood clot as the source of the questionable shadow. Carcinoma of the renal parenchyma (hypernephroma, adenocarcinoma, etc.) should be obvious by pyelography, as bleeding in this disease is usually a late sign and indicates invasion of the collecting system by an expanding tumor. In doubtful cases, aortography may be helpful in establishing a diagnosis. Tumors characteristically show puddling of contrast material in dilated tumor vessels whereas a benign lesion such as solitary renal cyst will appear as a clear area in the nephrographic phase of the examination. Selective catheterization of the renal artery has recently been developed to obtain unilateral renal arteriograms. These examinations are superior as there is no filling of the mesenteric arteries which may lead to errors in interpretation. Selective catheterization of the renal vein has also recently been employed and will enable the physician to make the diagnosis of chronic renal vein thrombosis, a disease which is responsible for proteinuria, hematuria, and occasionally hypertension.

Ureteral bleeding is most commonly secondary to the trauma of the passage of calculi. In many cases the patient feels no pain and notes only the appearance of hematuria. Without obstruction, a stone may pass with little or no colic. The diagnosis again will most likely be made by intravenous urography combined with cystoscopic localization of the source of bleeding. A non-opaque filling defect may be a uric acid calculus, but the possibility of the rare ureteral carcinoma should be kept in mind. Cytological studies and retrograde pyelography should establish the diagnosis. Periureteral inflammatory disease may also be associated with hematuria and is responsible for the occasional patient with acute appendicitis who shows miscroscopic hematuria at the time of the initial examination.

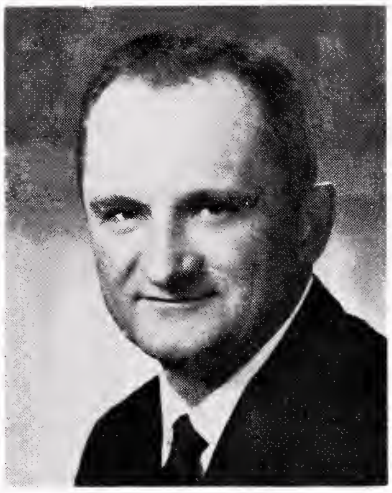
There are many causes of vesical hematuria. Bacterial infections are most frequently responsible for bleeding in women. Endoscopy should be deferred until the infection has cleared, but should not be neglected when the patient has improved on therapy. Many tumors are overlooked during the first episode of bleeding as the hematuria may clear coincidentally with the administration of drugs for infection. The patient may then return months or years later at the second episode of bleeding and show a hopelessly advanced bladder tumor. In the adult male, the prostate is the most common site of bleeding which is usually secondary to rupture of the large dilated veins which develop on the surface of a swollen adenomatous gland. Carcinoma of the prostate is rarely responsible for bleeding except in the late stages where there is frank invasion of the floor of the bladder and urethra by tumor.

Urethral bleeding is frequently intermittent and may not be associated with urination if the site of bleeding is distal to the external urinary sphincter. In males, these cases are almost always secondary to urethral trauma from masturbation or prolonged intercourse, and the possibility of a foreign body should be kept in mind, even in seemingly well adjusted individuals. Urethroscopy is usually indicated in all cases of lower tract bleeding to eliminate more serious causes such as urethral stricture, intraurethral condylomata, or the rare carcinoma of the urethra.

Probably the most common cause of hematuria in the world today is Bilharziasis, a disease rarely seen or diagnosed in this country. This disease is due to the blood fluke, Schistosoma hematobium which is found extensively throughout the middle East, Africa and India. It is estimated that more than a billion people are infected with this parasite. One should be aware of the disease and search for the ova in urine of patients exhibiting hematuria who have traveled to endemic areas. Cystoscopy shows characteristic lesions in the base of the bladder,

(Continued on Page 29)

PRESIDENT'S PAGE



Dear Fellow Members:

I would like to thank the Medical Association Members for the honor bestowed on me, by electing me as their president for the ensuing year. I accept the responsibility willingly and feel honored to be chosen for that leadership. I will work diligently for the common good of our Medical Association, with the understanding that our goals can only be approached if we all work together in a united and organized fashion with each of us assuming a fair share of the work load and responsibilities. The door of your president will at all times be open to all of you, who may have a problem, project or complaints that you would like to voice. I shall at all times see that due consideration is given to all opinions of our Association Members.

With service and loyalty in mind, I proudly accept the Office of President of our State Medical Association. Your President will carry out his duties to the best of his ability, realizing that which is best for our organization as a whole, may at times cause some dissatisfaction to some of the members.

Fraternally yours,

Paul Hohm, M.D.
President

STUDENT AMERICAN MEDICAL ASSOCIATION
UNIVERSITY OF SOUTH DAKOTA
SCHOOL OF MEDICINE
Vermillion, South Dakota

Dr. Robert Van Demark
Editor
The South Dakota Journal of Medicine
711 North Lake Avenue
Sioux Falls, South Dakota 57104

May 3, 1965

Dear Dr. Van Demark:

The students listed below received scholarships at the University of South Dakota Medical School's Annual Spring Awards Banquet at the Westward Ho Country Club in Sioux Falls.

A. Entering Freshmen

1. The Avalon Foundation Medical Scholarships
   Jerald J. Bratberg, Irene, S. D.
   Sandra Lee Jassmann, Pierre, S. D.
2. State Medical Association Award
   Rodney R. Parry, Canistota, S. D.
3. Lyle J. Hare Scholarship
   William R. Nelson, Lake Preston, S. D.

B. Present Freshman Medical Students

1. The Pfizer Award
   Lionel G. Brown, Volga, S. D.
2. Huron Clinic Scholarship
   Loren K. Tschetter, Sioux Falls, S. D.
3. The Avalon Foundation Medical Scholarships
   William J. Howard, Rapid City, S. D.
   Frank Messner, Brookings, S. D.
4. Dr. Thomas Y. Nakao Scholarships
   Garron L. Klepach, Detroit, Michigan
   Hatim Kanaaneh, Arabi Village, Israel
5. Payne Scholarship
   Dennis L. Johnson, Brunswick, Maine
   Jay W. Hubner, Yankton, S. D.
6. The Christian Peter Lommen Scholarship
   William J. Gallagher, Sioux City, Iowa
   Mark Harlow, Redfield, S. D.
7. The Dr. A. A. Jordan Memorial Award
   David E. Gambill, Rochester, Minn.
8. The Edwin H. Shaw, Jr. Medical Student Award
   Bruno DePalma, Canton, Mass.
9. The State Medical Ass n Scholarship
   Edward L. Ehricks, Flandreau, S. D.
10. The Yankton Clinic Medical Scholarship
    Lilla A. Breyer, Yankton, S. D.
11. The Meisenholder Award
    Dennis B. Kottke, Wells, Minn.

C. Sophomore Medical Students

1. The Huron Clinic Scholarship
   Mary R. Gugin, Pierre, S. D.
2. The Hoffmann-LaRoche Award
   Thomas C. Johnson, Vermillion, S. D.
3. The Medical Faculty Scholarship
   Thomas M. Picard, Newell, S. D.
4. The Dr. Arnold Pritschow Memorial Award
   Lawrence F. Nelson, Mitchell, S. D.
5. The State Medical Association Scholarship
   Barbara M. Schulte, Huron, S. D.
6. The Yankton Clinic Scholarship
   Ordean Torstenson, Dawson, Minn.
7. The Edward Memorial Award and The Price Award
   Douglas G. Henriksen, Spokane, Washington
8. The Pangborn Memorial Award
   Thomas Broadie, St. Paul, Minn.
9. The J. A. Kittelson Scholarship
   Lee M. Clark, Los Angeles, Calif.
10. The Kreiser Medical Scholarship
    Regg V. Antle, Huron, S. D.
11. The WA-SAMA Scholarship
    Daniel S. Duick, Skokie, Illinois
12. The Fred Kreiser Memorial Scholarship
    Elaine A. Pearson, Fairfax, S. D.
13. The Mosby Book Awards
    a. Bruce J. VanDyne, Minneapolis, Minn.
    b. Kenneth A. Muckala, New York Mills, Minn.
    c. William T. Higgs, St. Paul, Minn.
    d. Marlin K. Rosin, Minneapolis, Minn.
    e. Lee N. Nold, Madison, S. D.
14. The Merck Award
    Virginia F. Lievan, Aurora, S. D.
15. The Lange Book Award
    Gail M. Benson, Clark, S. D.
    Stuart E. Garrison, Great Falls, Mont.

D. The SAMA "Most Distinguished Professor Award"
   Dr. Thomas A. Anderson, Department of Biochemistry

The University of South Dakota Chapter of The Student American Medical Association would like to thank those who made these awards possible.

Respectfully yours,
Vermont H. McAllister
SAMA Public Relations

Dear Sirs,

I want to thank you for making my trip to the National Science Fair-International possible. I am looking forward to it. I know I will enjoy myself and meet many interesting finalists and scientists.

I urge you to continue encouraging scientific education by supporting the University of South Dakota Science Fair.

Thanks again.

Sincerely,

Linda Van Roekel

J. P. Steele, M.D., President
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota

April 12, 1965

Dear Dr. Steele:

Having been awarded the 1965-66 State Medical Association Scholarship, I wish to express my sincere gratitude to the South Dakota Association. It is indeed encouraging to find that those who are practicing are interested in the welfare of the student.

I am looking forward to school this fall.

Sincerely yours,

Rodney Parry

Differential Diagnosis of Hematuria—

(Continued from Page 26)

and the diagnosis can be confirmed by biopsy. A new drug (TWSb) has proved effective in eradicating the disease in most cases.[4]

The causes of hematuria are legion, but with the proper knowledge of routine urologic steps in diagnosis, the great majority of cases can be diagnosed and proper treatment employed. There remains a small number of cases in which, despite the utilization of all the diagnostic tools available, the source of bleeding remains obscure. These cases usually present with one-sided renal bleeding which has been attributed by various authorities to varicosities of the renal pelvis,[5] capillary hemangiomas,[6] and microliths of the renal parenchyma.[7] Frequently, kidneys removed because of bleeding alone will show no demonstrable lesion on pathological examination. For this reason, in the absence of a definite diagnosis, conservative treatment is usually indicated. Repeated pyelographic examinations at regular intervals will aid in demonstrating the development of significant pathology which because of its size may be missed on the initial examination.

In conclusion, I should like to emphasize that urinary tract bleeding from carcinoma is frequently **intermittent** in character. As a result, both physician and patient are lulled into a sense of false security and much valuable time is lost in arriving at a positive diagnosis. All patients with significant hematuria, gross or microscopic, should be exhaustively investigated until the causative factor is demonstrated.

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MINUTES OF THE COUNCIL MEETING
SUNDAY, APRIL 11, 1965
THE INN, HURON, S. D.

The Council of the South Dakota State Medical Association met on Sunday, April 11, at 12:00 Noon at The Inn Hotel in Huron, S. D. The meeting was called to order by Harold Lowe, M.D., Chairman of the Council. Present for roll call were Drs. J. P. Steele, Paul Hohm, Preston Brogdon, R. R. Giebink, E. J. Perry, J. J. Stransky, M. C. Tank, L. C. Askwig, F. D. Leigh, T. H. Sattler, J. T. Elston, E. P. Sweet, H. E. Lowe, E. A. Johnson. Also present were Commission Chairmen Drs. J. B. Gregg, G. W. Knabe, M. R. Cosand, D. L. Scheller, C. L. Vogele, and R. H. Quinn.

Mr. Erickson introduced Mr. Randall Tuffs, Assistant Executive Director of South Dakota Medical Service, Inc., and Mr. Dallas Whaley, Field Representative of the American Medical Association.

Dr. James Steele introduced Dr. James Goddard and Dr. M. Ghermen who spoke to the Council on the use of computers in medical practice. After extensive questions, answers, and discussion, Dr. Leigh moved that the Council express a definite interest in the program, and request Dr. Steele, Dr. Goddard, and Dr. Ghermen to present information on computers in medicine at each District Medical Society, at a special meeting to be called after June 1. The motion was seconded by Dr. Perry and carried.

Dr. Perry moved that the reading of the minutes of the previous meeting be dispensed with, inasmuch as they have been published in the Journal. The motion was seconded by Dr. Tank and carried.

Mr. Erickson introduced Dr. Frederick Votaw and Mr. Rice from the Veterans Administration who spoke on the proposed change in the Letter of Agreement with the Veterans Administration. Dr. Perry moved that the Council terminate the Letter of Agreement of 1959, with 30-day notice, and renegotiate on the Relative Value Study with the Veterans Administration. The motion was seconded by Dr. Elston and carried.

Mr. Erickson reported on the present status of the Building tax exemption.

A discussion was held on the format of future annual meetings. Several suggestions were made by the various District Medical Societies. No action was taken on the matter, pending the report of the Commissions.

The Council considered the resolution passed by the New Mexico Medical Society.

RESOLUTION FROM THE NEW MEXICO MEDICAL SOCIETY

WHEREAS, the New Mexico Medical Society recognizes and approves the purpose and high standards of the Joint Commission on Accreditation of Hospitals, and

WHEREAS, the accreditation of a given hospital has heretofore been on the total effort of the hospital to maintain the standards recommended and not on any single item, and

WHEREAS, there is a difference between teaching hospitals and non-teaching institutions in the value of, and necessity for keeping voluminous and repetitive records, and

WHEREAS, most hospitals in New Mexico have periodic review and amendment of individual house staff by-laws, board of trustee by-laws, and hospital rules and regulations to maintain, promote and insure high standards of excellence for the practice of the medical sciences, and

WHEREAS, the Joint Commission on Accreditation of Hospitals, especially in regards to records, is departing more and more from total evaluation and is assuming a dictatorial attitude for single items such as the discharge summary and has substituted the words "shall be done" instead of "should be done" in their recommendations, implying non-accreditation for failure to comply, and

WHEREAS, the New Mexico Medical Society believes each hospital and its individual practicing physicians are able to evaluate these standards and should be allowed the freedom to do so, and

WHEREAS, the New Mexico Medical Society views with alarm the edicts emanating from the Joint Commission on Accreditation of Hospitals for further standardization of the free practice of medicine, therefore

BE IT RESOLVED: The New Mexico Medical Society inform the Joint Commission on Accreditation of Hospitals its members object to the individual "shall" orders currently published in official publications, that the Society request the Joint Commission on Accreditation of Hospitals to determine the accreditation of a given hospital from a broad base of general recommendations and further, some consideration be given the specific problems of the non-teaching hospital.

Dr. Brogdon moved that the South Dakota State Medical Association support this resolution when presented to the House of Delegates of the American Medical Association. The motion was seconded by Dr. Giebink and carried.

The Council considered a request that the physicians in South Dakota donate $1,500.00 to build the doctor's home in South Dakota, Chile, South America. Dr. Giebink moved that the Medical Association raise this money by voluntary contributions from the physicians of South Dakota, to assist this community destroyed by avalanche and earthquake. The motion was seconded by Dr. Sattler and carried.

A discussion was held on including AMPAC and SoDaPac dues with the State Medical Association and American Medical Association dues billing in a central billing from the executive office. Dr. Leigh moved that AMPAC and SoDaPac dues not be included in billing for State Association and AMA dues. The motion was seconded by Dr. Sattler and carried.

Dr. Stransky moved that the appropriate Commission of the South Dakota State Medical Association be directed to study the problem of dues collection with the recommendation that central billing be established for State and AMA dues, and that each District decide for itself whether or not to have the District dues collected by the executive office or by the individual districts. The motion was seconded by Dr. Sattler. Dr. Brogdon moved to amend the motion, deleting the part referring to local dues being collected by the State office, leaving only the State and AMA dues to be collected by the State office. The amendment was seconded by Dr. Leigh, but was defeated. Dr. Hohm moved that the motion be amended to read that it be referred to the Commission for study without recommendation by the Council. The amendment was seconded by Dr. Leigh. The amendment carried. The original motion as amended was carried.

The Council recommended that the names of Dr. B. F. King of Aberdeen, Dr. J. T. Elston of Rapid City, and Dr. E. P. Sweet of Burke, be submitted to the Governor for his consideration in making the appointment to the South Dakota State Board of Medical and Osteopathic Examiners for the term of Dr. King, which will expire June 30, 1965.

After discussion, Dr. Hohm moved that the Council suggest that there should be no gambling at the doctor's stag at the annual meeting. The motion was seconded by Dr. Elston and carried.

Mr. Erickson discussed a recommendation to the House of Delegates concerning the role of Blue Shield in the operation of any federal law which might be enacted by Congress.

Resolution

WHEREAS, in the event of the passage of medical voluntary supplemental health care legislation for those over 65, the participation of Blue Shield in this activity must be within the established principles and capacities of Blue Shield so to serve.

THEREFORE BE IT RESOLVED, that the House of Delegates of South Dakota State Medical Association, and the Corporate Body of South Dakota Med-

ical Services, Inc., hereby authorizes the Board of Directors of South Dakota Blue Shield to offer the services of Blue Shield in the public interest, in a manner that will maintain good quality of medical care, freedom of choice of physician, and no interference in the patient-physician relationship.

Dr. Sattler moved the adoption of the resolution and that it be presented to the House of Delegates at the annual meeting. The motion was seconded by Dr. Hohm and carried.

A discussion was held on the publication of information on medical ethics for the physicians in South Dakota. Dr. Steele moved that the Council adopt in principle the publication of a booklet on ethics and refer to the proper Commission, the approval of the final copy. The motion was seconded by Dr. Sattler and carried.

A discussion was held on the possibility of building up a "War Chest" for future educational campaigns on national legislation. Dr. Hohm moved that the matter be tabled. The motion was seconded by Dr. Leigh and carried.

Dr. J. B. Gregg discussed the report of the Commission on Medical Service:

RURAL HEALTH: There is nothing to offer in the way of a constructive program that could be spearheaded by the Medical Profession.

MEDICAL SCHOOL ENDOWMENT ASSOCIATION: This committee has met several times to discuss problems, to confer with the student loan applications committee of the Medical School and to make recommendations for changes in the Articles of Incorporation. These changes will not be made until after July 1 of this year. The Endowment Association will have a booth at the annual meeting and has started a $100 Booster Club for the Endowment Association.

MEDICAL SCHOOL AFFAIRS COMMITTEE: Closer liaison with the Medical School and the Medical Association is beginning to be recognized.

TRAFFIC SAFETY COMMITTEE: Recommends to the Council that the following physicians be recommended for appointment to the Medical Advisory Board to the Department of Motor Vehicles:

C. Tesar, M.D., Ophthalmology
R. Giebink, M.D., Orthopedics
G. Smith, M.D., Neuro-Surgery
W. Taylor, M.D., Internal Medicine
C. Jahraus, M.D., Gen. Practice
J. Stransky, M.D., Gen. Surgery
L. Behan, M.D., Psychiatry

SCHOOL HEALTH COMMITTEE:

a) The suggested schedule for immunization of school children has been sent to each member of the State Medical Association.

b) The South Dakota State Health Department has been made aware of problems which result from failure of communications and has agreed to not institute any program relating to immunization of school children, issuance of immunization cards, etc., without first consulting the committee of the State Medical Association.

c) Health examination forms from the colleges and universities of this state, as well as those from nursing training programs and other sources, have been reviewed by the committee. The committee agrees that the health examination form used at the University of South Dakota covers the history, physical examination, immunizations, and necessary laboratory information as adequately as any of the forms examined. However, because there is now in the process of development a standard college health examination form by the AMA, the committee deferred any action on a form for the state of South Dakota until the AMA form has become available.

d) The committee feels that a health examination form patterned after that now in use in the public schools of Sioux Falls has much merit. However, the form should have available space for information relating to visual acuity, hearing testing, hemoglobin, urinalysis and possibly other additions relating to polio and measles immunization.

e) The committee recommends that a High School Athletic Examination Form be filled out by a physician who examines the applicant and that standards be established as to the extent of the evaluation of the applicant. A history of diseases which might be affected detrimentally by athletics should be a part of the record as well as an indication of physical defects and any limitations which should be placed on the athlete.

COMMITTEE ON HOSPITAL UTILIZATION AND INSURANCE ADVISORY BOARD: This committee recommends to the Council of the South Dakota State Medical Association that each hospital staff be encouraged to establish a Utilization Committee to review patient admissions at regular intervals to direct attention to over-utilization of hospital beds. There should also be a committee of the South Dakota State Medical Association for the same purpose. This committee also recommends to the Council that an Insurance Advisory Committee be established on a state level and that regional advisory committees also be established on a local or district basis. These committees would be an advisory agency to investigate and make recommendations in instances of disputed insurance claims. It is suggested that the experiences and possibly the services of the present Medical Advisory Committee for the South Dakota Blue Shield might be utilized in the establishment of this Insurance Advisory Committee.

The Commission on Medical Service discussed the problem now being encountered in the western part of the State relating to the establishment of Eye Care Programs sponsored by the A.F.L.-C.I.O. This subject has been discussed by the members of the South Dakota Academy of Ophthalmology and Otolaryngology and it is the feeling of the members of the Academy that they do not desire to have anything to do with negotiation with any organizations such as the A.F.L.-C.I.O. until the matter has been fully aired and acted upon by the State Medical Association, and proper directions and go-ahead was forthcoming therefrom.

Mr. John Jones, Director of the Immunization Program of the South Dakota State Health Department met with members of the Commission and discussed the immunization program, the health cards and other matters relating to the subject of public health, and relating to the activities of the School Health Committee. A letter of explanation, sanctioned by the committee will be sent to the physicians of the state, explaining the proposed health care system. A booth will be sponsored by the State Health Department at the coming annual meeting, at which there will be examples and explanations of the proposed immunization card system. An editorial will soon appear in the Journal with information relating to the proposed immunization program.

Dr. Hohm moved that the report of the Commission on Medical Service be accepted. The motion was seconded by Dr. Sweet and carried.

The report of the Commission on Scientific Medicine was read by Dr. G. W. Knabe:

Tuberculosis Control Program: Survey of hospitals and physicians completed. To get the program going, the Commission recommends the establishment of initial treatment and evaluation centers at Sioux Valley Hospital, Sioux Falls; Memorial Hospital, Watertown; and Sacred Heart Hospital, Yankton. Each would have a basic staff of internist, thoracic surgeon, radiologist and pediatrician, plus others. Patients referred back to family physician when possible. Program to be continually developed and improved. Fee schedule revised.

Suicide Law: Council in January, 1963, felt attempted suicides should be reported to judge and mandatory psychiatric evaluation follow. Subsequent discussions generally in agreement with this. Present code says only that suicide is bad crime. Commission recommends: (1) attempted suicides be reported to county judge (2) duty of judge to order a mandatory psychiatric evaluation (3) treatment necessary be ordered. Also, recommend entire revision or renovation of code.

Mental Health: Results of survey conducted at behest of Mr. Stricklett, Mental Health Section, Department of Health, reviewed and approved for release to Mr. Stricklett. Survey only points out doctors lack of understanding on how to manage care of mental cases in relation to state agencies. 20% of doctors responded.

Policy on Questionnaires: To keep doctors from being bothered and to ensure that information is used in the right way, some guidelines were proposed. Questionnaires should be approved by appropriate commission, doctor should know at whose behest it is being sent and what will be done with results. Commission to review final results of any survey done through SDSMA before release authorized.

Mental Retardation: Continued action to enact mandatory PKU legislation reported. Commission reaffirms previous stand that it not be mandatory but that doctors be advised of the various tests. AMA and Academy of Pediatrics will soon send out guidelines for practicing doctors. SDSMA should endorse AMA Committee on Maternal and Child Care recommendation.

Venereal Disease: Dr. Clark Johnson's report of V.D. Seminar, Denver, Jan. 12-15 accepted. V.D. is increasing and major problem hindering eradication is poor reporting of disease. Dr. Johnson will review problem in South Dakota and prepare informative note for South Dakota Journal of Medicine.

President's Commission on Heart Disease, Cancer and Stroke: Great implications for practice of medicine in South Dakota. Deserves continuous study. Dr. Lushbough's core group has secured $500 for planning funds (result of 2nd National Conference on Cardiovascular Diseases) to implement educational program in South Dakota. Possible Governor's conference on Heart Disease to draw attention to problem. SDSMA can through this group show leadership in diverting federal support into proper channels.

Clinical Pathology: Programs soon to be mailed for SDSMA-sponsored workshops for medical technologists and technicians May 6, 7, 8 at USD Medical School. Dr. Armand J. Quick of famous prothrombin test will talk — among others.

Annual Scientific Meeting: Since Commission will be more involved in planning, various proposals for new format have been considered. Review of USD postgraduate education survey of doctors noted. Commission offers its own proposal for two-day scientific part:

First day — morning: Lectures by guest speakers.

First day — afternoon: Separate specialty society meetings with general attendance divided among them. Specialty lunch may precede.

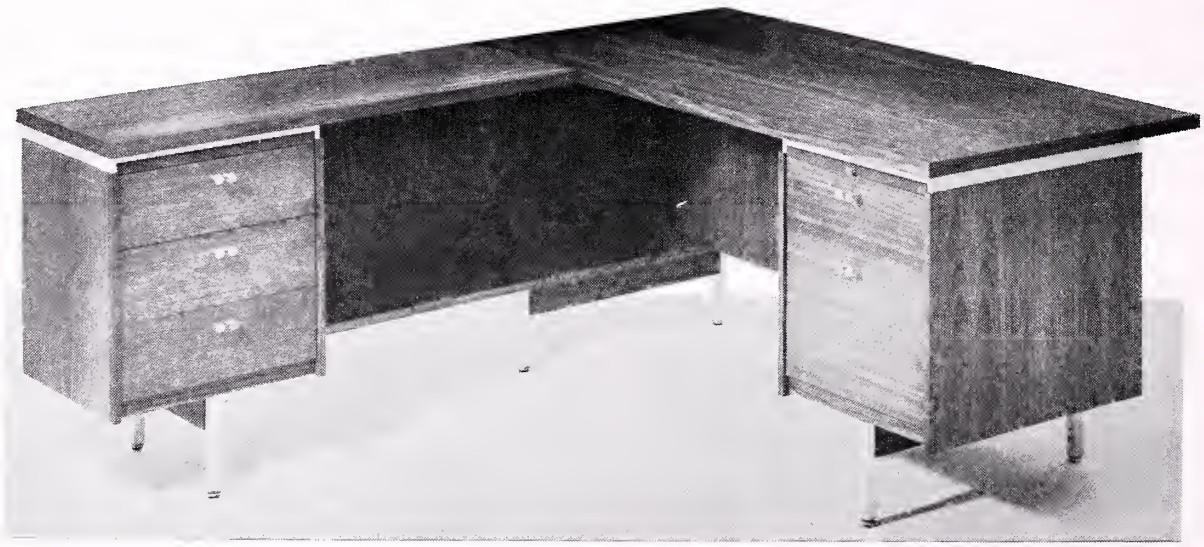
Second day — morning: Talks by South Dakota and other region physicians. First and second day morning speakers could be admixed.

Second day — afternoon: Symposium, or better: one or several short courses or workshops on specific subjects with separate registration and M.D. participation.

Dr. Hohm moved the acceptance of the report, with the exception of the first and last items which should have further discussion. The motion was seconded by Dr. Perry and carried.

Dr. Elston moved that the Council accept the section of the report referring to the Tuberculosis Program and forward it to the House of Delegates, recommending acceptance by that body. The motion was seconded by Dr. Hohm and carried.

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Dr. Sweet moved that the last section of the report, dealing with future annual meetings be referred to the Commission on Internal Affairs for review. The motion was seconded by Dr. Tank and carried.

Dr. Vogele read the report of the Commission on Communications.

The Commission recommended to the Council that a state-wide Speakers Bureau be established; that a list of the speakers and topics be kept on file in the executive office. This Speaker's Bureau could be handled at the District level and a master file kept in the executive office.

The Commission reviewed the results of the recent legislative campaign. Only 1.98% of materials sent out were returned by the doctors of the State.

The Commission discussed the problem of communications with the individual physician. Communications could be accomplished at District meetings. Perhaps one physician in each District could be designated as the Communications Chairman. Also the District Secretary could go over recent communications at each meeting. The Grab Bag was considered to be an excellent source of information. The Commission suggested a letter to the office secretaries similar to the Grab Bag. The Commission suggests that each physician keep a permanent file of all issues of the Journal.

The Commission reviewed the work done on the Journal in the past year. The Journal is now completely out of the red and is able to pay current expenses on a month to month basis. The Commission recommended that Mr. Richard C. Erickson be given a vote of thanks for his outstanding work on the Journal in the past year.

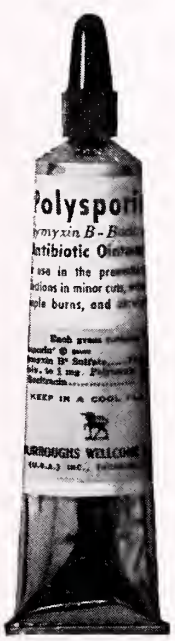
Dr. Askwig moved that the Council accept this report. The motion was seconded by Dr. Perry and carried.

Dr. Quinn read the report of the Commission on Legislation and Governmental Relations:

1. The Commission recommends to the Council that they protest the inclusion of private practitioners in the Social Security program and to direct the executive office to notify our Senators and Representatives of this action.
2. The Commission recommends that all physicians be aware of the trend in Area-Wide Planning and to inform the executive office of any activities in their respective areas.
3. The Commission recommends that an opinion be requested from the Attorney General concerning the liability of physicians in completing the medical report forms for drivers' licenses.
4. The Commission recommends that the Council express the opposition of the South Dakota State Medical Association to the inclusion of any private physician's services in H.R. 6675 and that our representatives in Washington be advised of this action.
5. The Commission recommends to the Council that legislation concerning liability of hospital staff officers be drawn up and introduced at the next session of the Legislature. This legislation could be patterned after the existing laws in California and Indiana.
6. The Commission recommends to the Council that a unit system of payment for medical care of county patients be set up on the same basis as M.A.A.
7. The Commission has considered resolutions 1 and 2, submitted by the Seventh District Medical Society and agrees with the intent of the resolutions.
8. The Commission recommends that the Council request clarification of the physician's responsibility in the care of VA Home Town Care patients be made by the Veterans Administration and furnished to the physicians in the State.
9. The Commission recommends that the matter of the VA Letter of Agreement be left to the discretion of the Council.

Dr. Brogdon moved the acceptance of this report. The motion was seconded by Dr. Sweet and carried.

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Dr. Scheller read the report of the Commission on Internal Affairs.

1. The Commission considered resolutions #3 and #4, as submitted by the Seventh and Ninth District Medical Societies. The Commission wishes to report to the Council that they feel Resolution #4 is a bit rash, but that it be submitted to the House of Delegates so a full discussion of the subject can be held. The Commision was generally in favor of Resolution #3, but felt that it should be given careful study.
2. The Commission considered the format of future annual meetings. No recommendations will be made until after the 1965 meeting.
3. The Commission went over the proposed budget. It was decided that all Commission members will receive the monthly financial statements.
4. After due consideration, the Commission recommends to the Council that orientation meetings for new physicians in South Dakota should be held. It was suggested that the orientation meeting be scheduled at the time of the Fall Council meeting, perhaps in the morning; that the Councilor of each District should be responsible for urging all new members to attend.

Dr. Elston moved that resolution #4 be referred to the House of Delegates. The motion was seconded by Dr. Perry and carried. Dr. Tank moved that resolution #3 be referred to the House of Delegates. The motion was seconded by Dr. Askwig and carried. Dr. Tank moved acceptance of the report as a whole. The motion was seconded by Dr. Leigh and carried.

The meeting adjourned at 5:30 P.M.

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Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
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Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

*Dorhout Mees,E.J.,and Geyskes, G.G.: Acta med.scandinav. 175:703,1964.

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Pop's Proverb

Just suppose you **had** married the first girl you wanted to.

NEWS NOTES

A. W. Stevens, M.D., formerly of Rock Springs, Wyo. has established a medical practice in Custer, South Dakota.

* * *

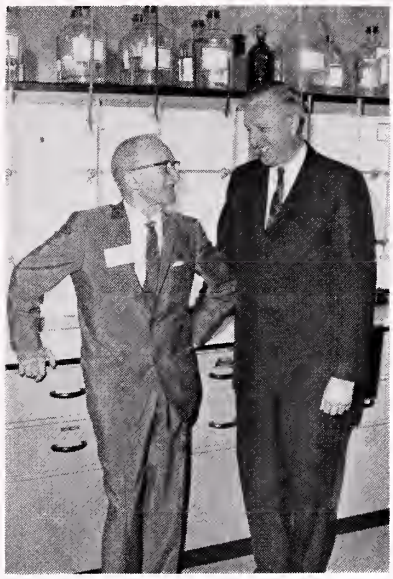
William Hanson, M.D., formerly of De Smet has joined the Huron Clinic.

* * *

Walter Kitzler, M.D., Faulkton, and **Dean Hughes, M.D.,** Sioux Falls, have announced they will establish a medical practice in Clear Lake this summer. Dr. Hughes will come to Clear Lake upon completion of his internship at Sioux Valley Hospital in Sioux Falls. **Linda Hughes, M.D.,** wife of Dr. Hughes, is planning on a two year residency in pediatrics, after which she will also join the staff in the field of general practice and pediatrics.

* * *

Will E. Donahoe, M.D., Sioux Falls physician for 52 years and a pioneer in community health programs, has received the College of St. Thomas Aesculapian Award. The award, given annually, to an alumnus of St. Thomas by premedicine and biological science students at the St. Paul institution, recognizes community service.



Dr. John C. Hagin (left) of Miller, S. D., chats with E. Claiborne Robins, president of A. H. Robins Company, Richmond, Va. pharmaceutical manufacturer. Dr. Hagin was one of 15 Physician Award winners who visited Richmond May 6-9 as a guest of the Company and Mr. Robins.

* * *

C. R. Turner, M.D., Brookings, tied for second with H. Fauskee in the Crooks Gun Club opening trap shoot in Sioux Falls, scoring a 95 x 100. Dr. Turner then went on to win the shoot-off to take the class "A" trophy.

He also placed runner-up in the race for the high over-all trophy which went to Harvey Scharn of Sioux Falls with a 219 x 250. Turner's score was 215 x 250.

* * *

Arthur A. Lampert, M.D., Rapid City, has been reappointed a member of the Council on Legislative Activities of the American Medical Association.

The new Tyndall Clinic is now open to patients. A public showing will be scheduled, upon completion of landscaping and other final touches.

* * *

Gov. Nils Boe has appointed a medical advisory board to the Motor Vehicle Department. The board's function will be to advise and counsel the department in connection with driving privileges of persons who may be suffering from a physical or mental impairment. Board members include **Charles Tesar, M.D.,** Rapid City; **George Smith, M.D.,** Sioux Falls; **William Taylor, M.D.,** Aberdeen; **R. C. Jahraus, M.D.,** Pierre; **Lawrence Behan, M.D.,** Yankton; **Robert Giebink, M.D.,** Sioux Falls; and **John Stransky, M.D.,** Watertown.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

Dr. Walter L. Hard, Dean and Professor of Anatomy of the South Dakota School of Medicine was invited to present a demonstration of the use of closed circuit television in the teaching of anatomy at the National Program of the Council on Medical Television at Ann Arbor at the University of Michigan May 17, 1965.

* * *

The next scheduled Part I (written) examination of the American Board of Obstetrics and Gynecology will be held at various examining centers in the United States, Canada, and military bases outside of the continental United States on Friday, July 2, 1965, at 10:00 A.M. Application forms and bulletins may be obtained by writing to Clyde L. Randall, M.D., Secretary and Treasurer, American Board of Obstetrics and Gynecology, 100 Meadow Road, Buffalo, New York 14216.

Postgraduate education courses sponsored by Hahnemann Medical College and Hospital will be held on July 26-30, 1965 at the Hahnemann CVI Bldg. in Philadelphia, Pa. The title is Interpretation and Therapy of Cardiac Arrhythmias. Leonard S. Dreifus, M.D., is the director.

* * *

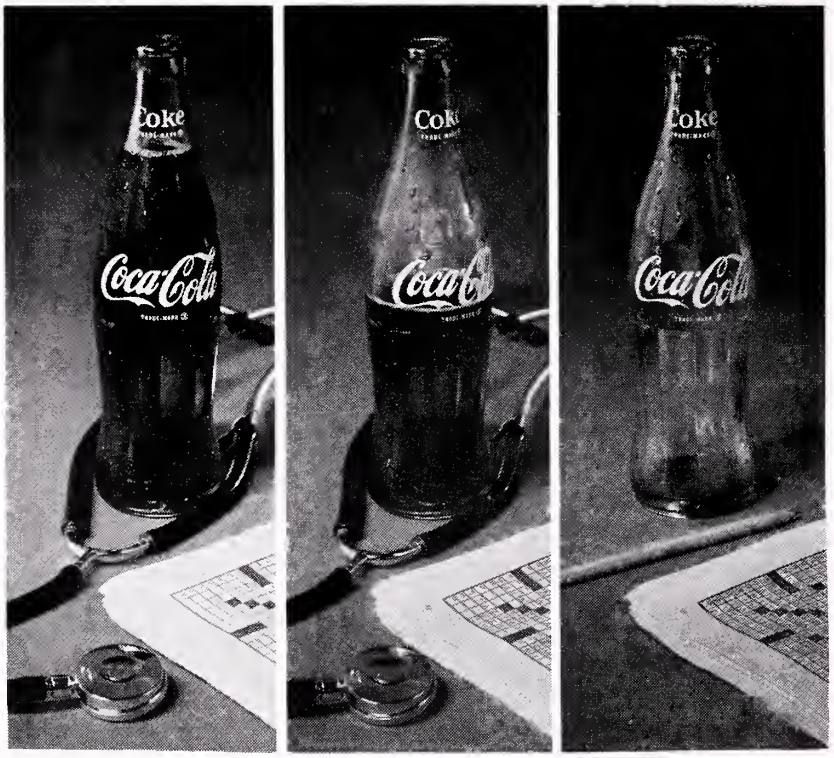
The South Dakota Academy of Ophthalmology and Otolaryngology presented to **Harold F. Schuknecht, M.D.,** a distinguished alumnus of the University of South Dakota Medical School, a Plaque as testimony of Honorary Membership in this Academy, in recognition of his outstanding achievements, teaching, and research, which have promoted the advancement of Otolaryngology. The Plaque was presented at the Annual Meeting of the Academy on May 17th, at Watertown, South Dakota.

Robert Bartron, M.D., Watertown, was appointed as the 1965 Physicians' fund raising Chairman for Mental Health, by Atty. Gen. Frank Farrar, State Mental Health Fund Drive Chairman.

* * *

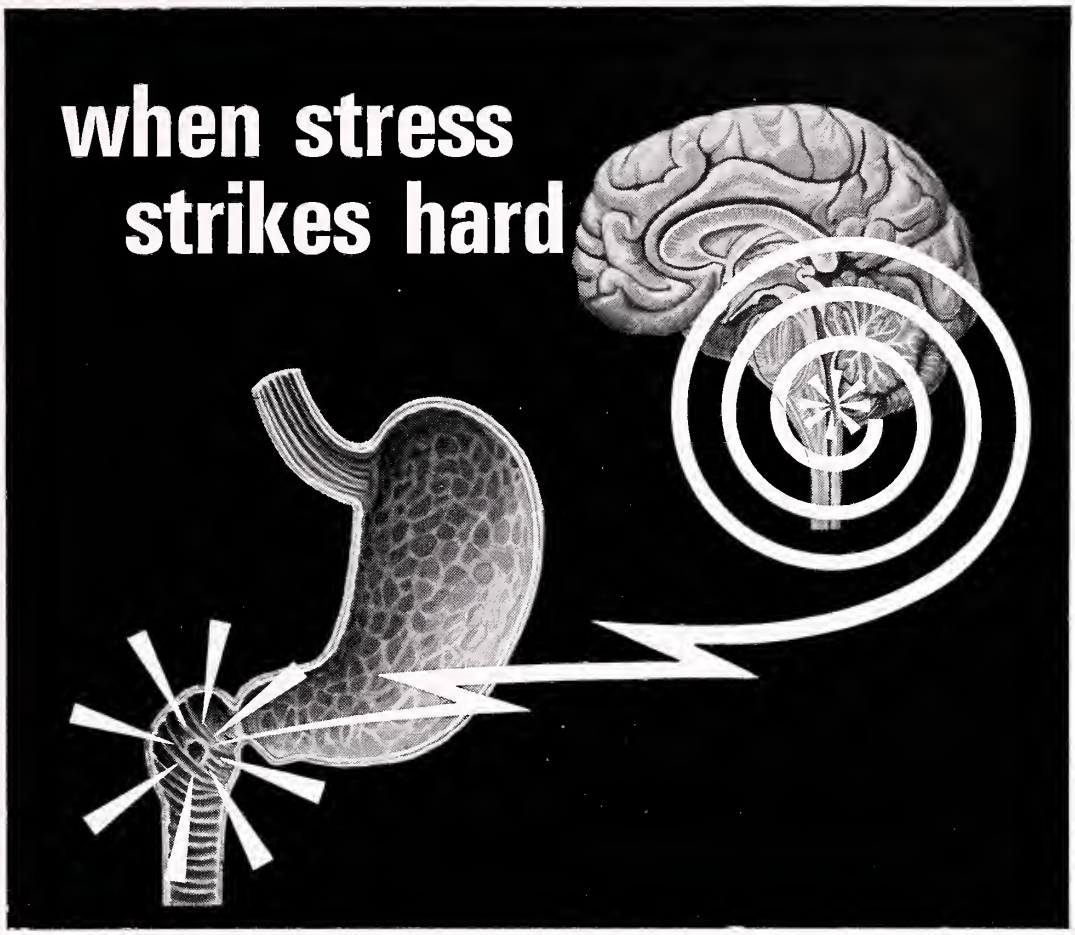
Samuel Rosa, M.D. is a new staff physician at Redfield State Hospital and School. He joined the staff the latter part of February, and assists **W. P. Damm, M.D.** at the Medical hospital facility at the institution.

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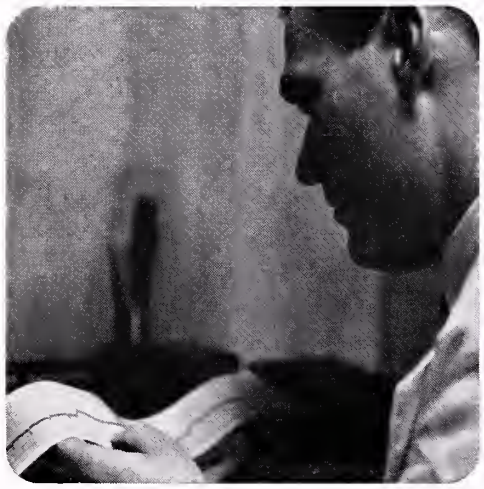
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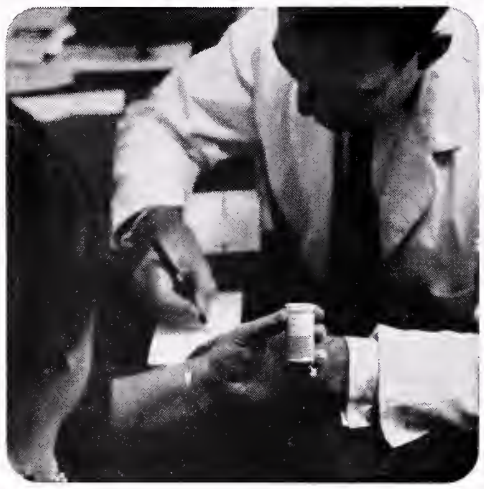




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*Chupkovich, V.; Finnerty, F. A., Jr., and Kakaviatos, N.: The value of chlorthalidone plus reserpine in moderately severe and severe hypertension: A two year study. Presented at the 7th Inter-American Congress of Cardiology, Montreal, June 14–19, 1964.

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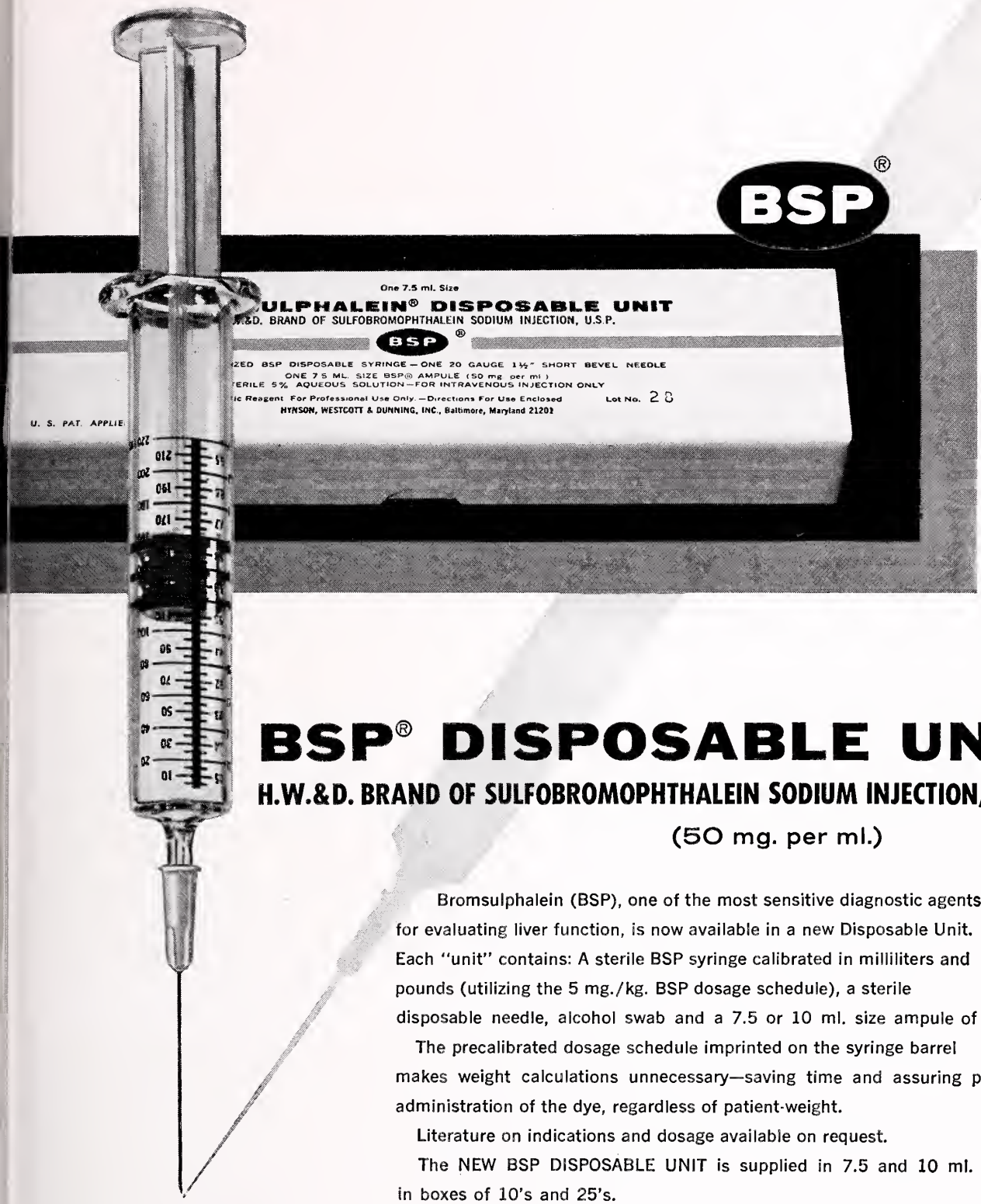
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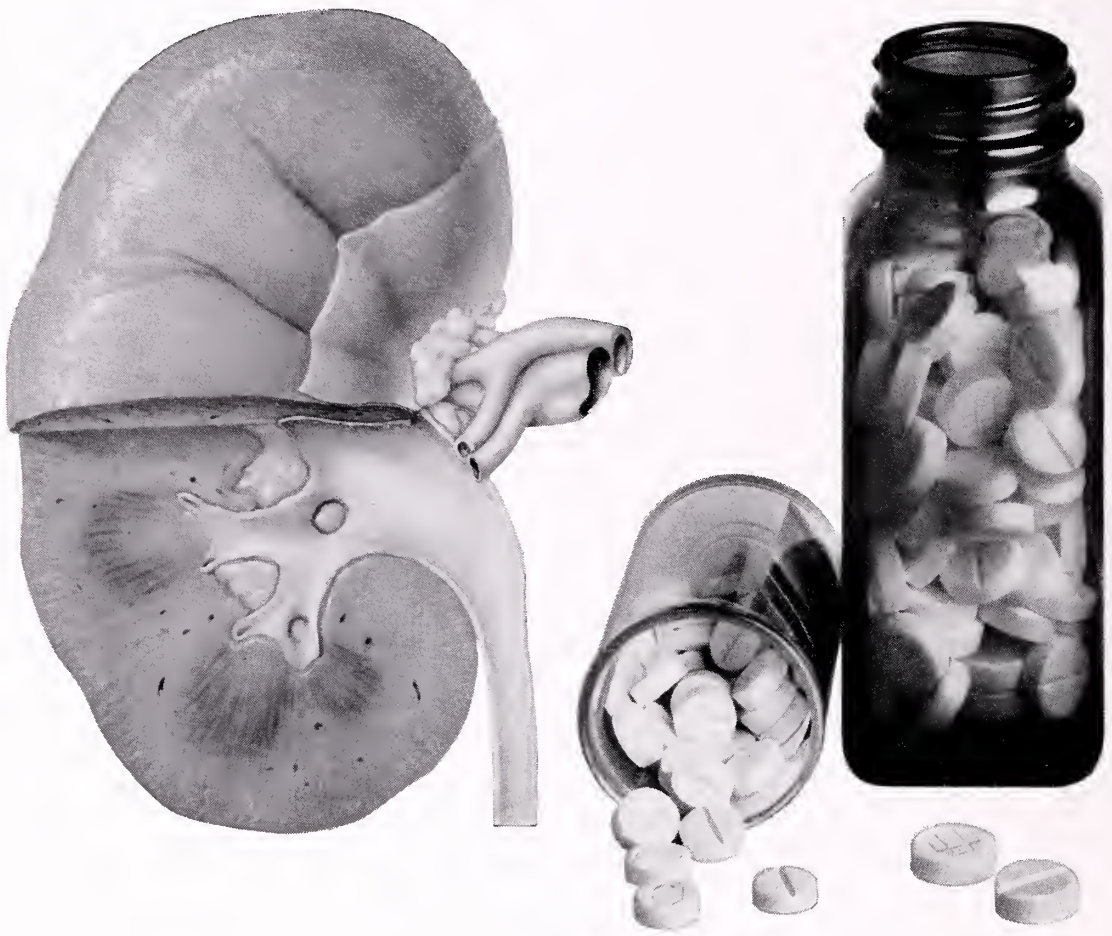
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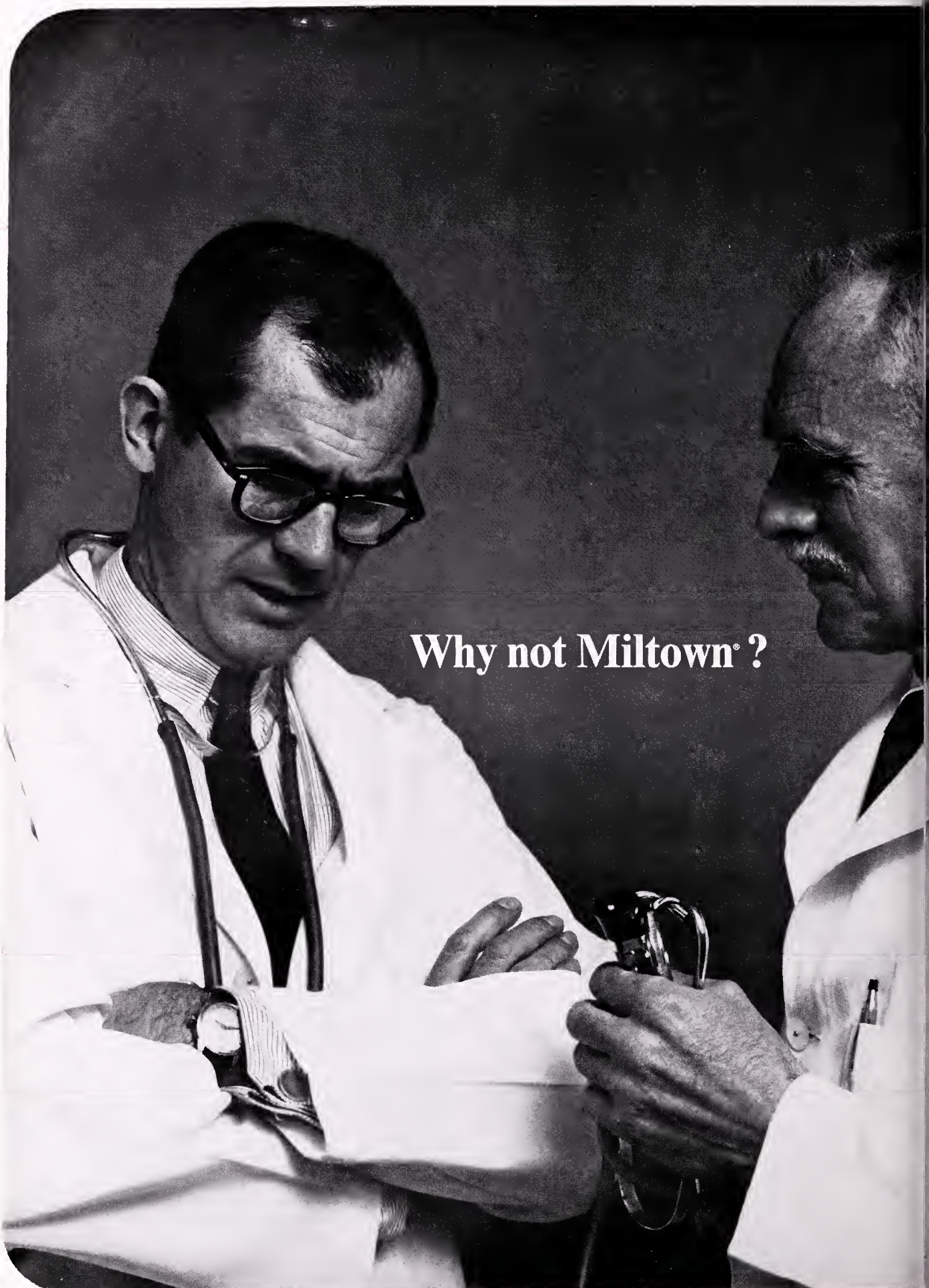
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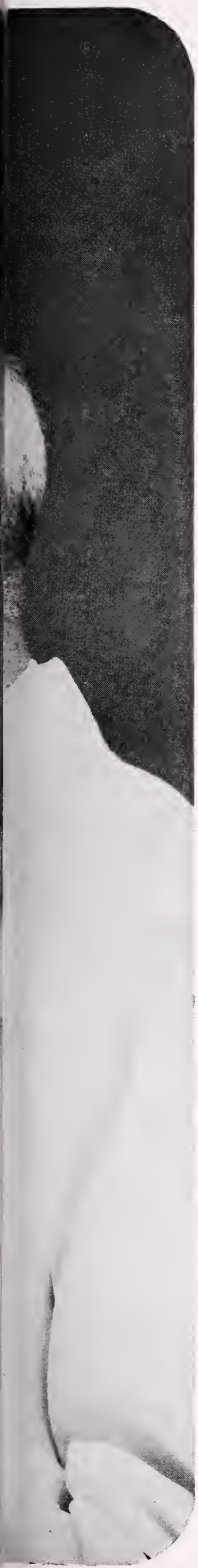
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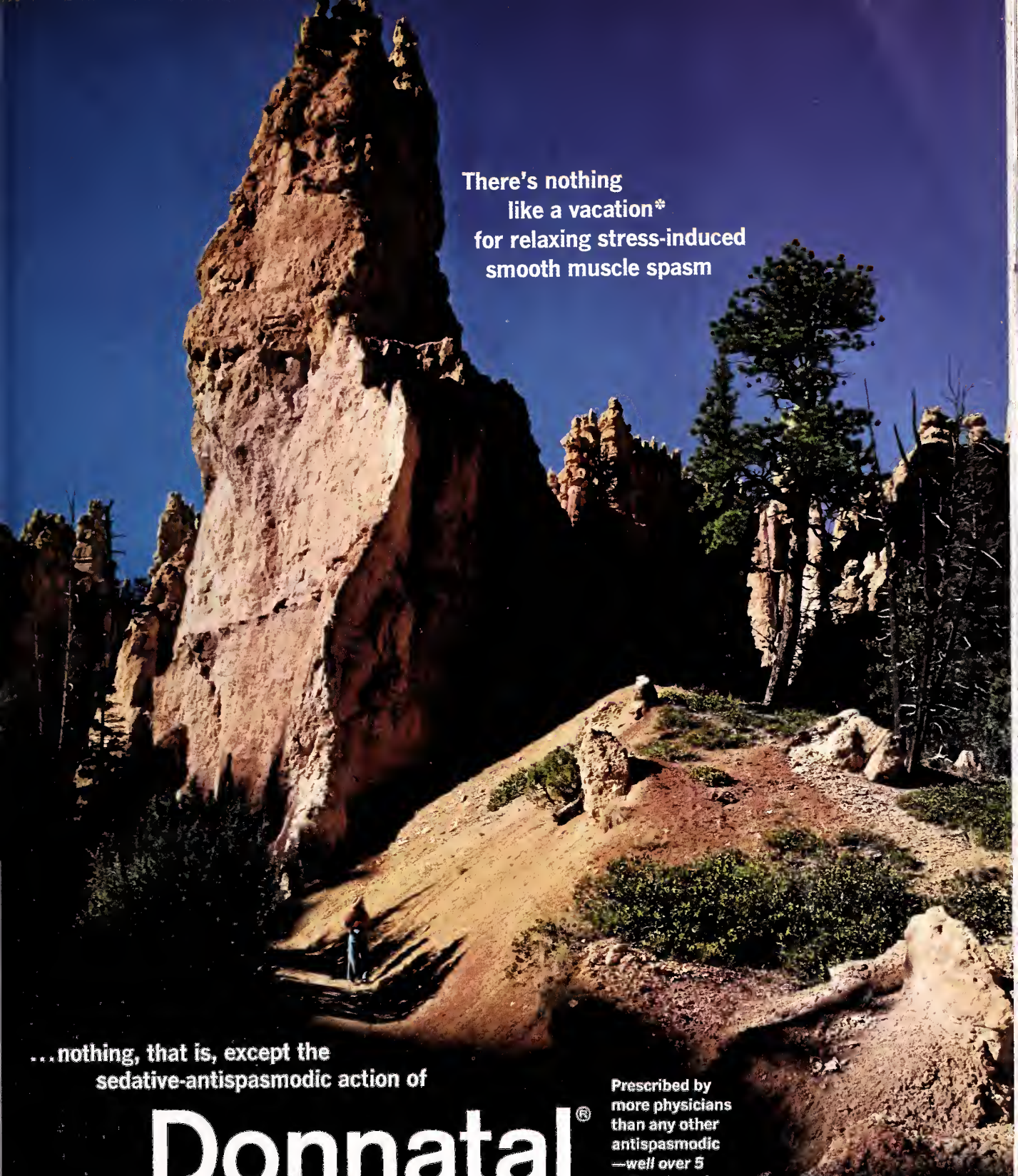
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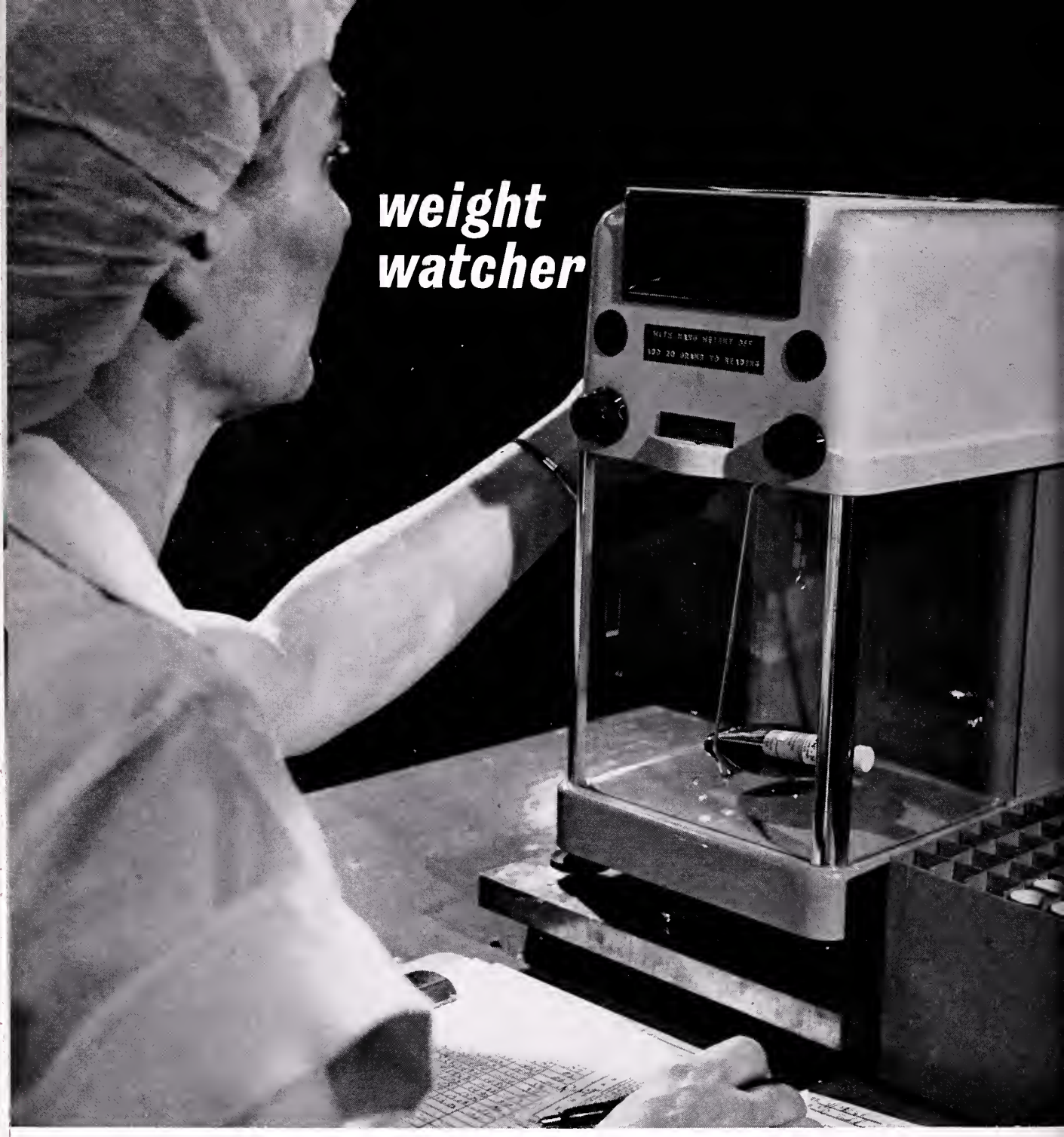
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The Familial Transmission Of a G/G Chromosome in a Case of Down's Syndrome*

by

Walter L. Hard, Ph.D., James D. Eisen, Ph.D., and Willis F. Stanage, M.D., School of Medicine, University of South Dakota Vermillion**

A particular type of mental retardation accompanied by certain specific physical malformations was first described by Seguin in 1846 as "furfuraceous idiocy."[1] Later, Langdon Down[2] introduced the term "mongoloid" to classify this type of mental retardation on the theory it was to be associated with the expression of certain traits of the mongolian race. While this theory is untenable, the term Down's syndrome is commonly employed in favor of avoiding the designation of mongolism.

The presence of an extra chromosome, 47 instead of the normal diploid number of 46, in tissue cells of "mongoloid" children was first reported in 1959.[3] Repeated confirmation of these original observations has established beyond doubt that mongolism will result from the occurrence of an additional chomosome in the 21-22 or G group, and by definition the disease should be characterized as the 21 trisomy syndrome.[1]

Although the most commonly encountered form of the disease is that in which an extra 21 chromosome is represented, the trisomic condition may exist in the presence of a normal 46 chromosome complement. This situation may develop as a result of the extra 21 chromosome becoming attached or translocated onto another chromosome. Most commonly this translocation is to a member of the 13-15 or D group of chromosomes and is designated 13-15/21 trisomy. These cases have potentially more serious consequences since it is possible for the translocation to exist in a phenotypically normal parent and the offending chromosome be transmitted to the offspring with a resulting 21 trisomic condition and "mongolism." This is the transmissible or familial form of the disease.

* This work was supported by USPH grants HD-00370 and 1-SO1-FR5421-04-5.

**Human Genetic Laboratory, Nebraska Psychiatric Institute, Omaha.

The following case report is of a relatively uncommon type of the familial 21-trisomy syndrome, involving chromosomes of the 21-22 or G group. The majority of previously reported cases of Down's syndrome exhibiting G/G translocations are non-familial in type.[4, 5, 6]

Case History: The propositus (YC 39580) is a white female born on 7/3/64 to a 23 year old woman, who was Gravida 2, Para 1. The first pregnancy terminated in a missed abortion delivered at 8 months of fetal age, on 6/12/62. However, fetal death is recorded as having occurred at the end of the first trimester on the basis of absence of heart tones. The father was 26 years of age, living and well. The family history was negative except that the maternal grandmother had seven spontaneous abortions as well as seven pregnancies resulting in viable children, all living, with ages from 7 to 29 years.

Pregnancy was uncomplicated except for a URI treated with penicillin during the 7th week. Delivery occurred at 40 weeks and was uncomplicated. The propositus breathed spontaneously at birth, muscle tone was poor and there was generalized cyanosis (Apgar 7). Birth weight was 6 pounds, 9 ounces. Physical examination revealed an infant with epicanthus, protruded tongue, and short broad neck with a laxity of skin at the lateral aspects. The space between the first and second toes was increased. The hands showed double palmar horizontal lines. There was marked hypotonia of the skeletal musculature. There was no heart murmur. The little fingers were not remarkably shortened. Subsequent development of the patient was essentially normal and at the end of six months postnatal weighed 19 pounds, 15 ounces. She seemed alert, supported her head fairly well but made no attempt to sit. The initial physical findings were persistent with the addition of a small umbilical hernia. An additional diagnostic sign of mongolism was exhibited in pelvic x-rays, taken at 7 months, showing an acetabular angle of 1-2°. Blood studies performed at this time on both parents and infant were not significant for blood groups and electrophoreteric patterns for serum proteins did not deviate from normal values with the exception of an elevated alpha$_2$ globulin level for the infant. Protein bound iodine values were in the normal range for the propositus.

A chromosome analysis was solicited to confirm the clinical impression of mongolism in the propositus. Leucocyte cultures were prepared in the usual manner and counts recorded on 100 metaphase plates. Visual analysis completed on 25 plates revealed a complement of 46 chromosomes, but with only 3 in the G group and a small additional metacentric resembling

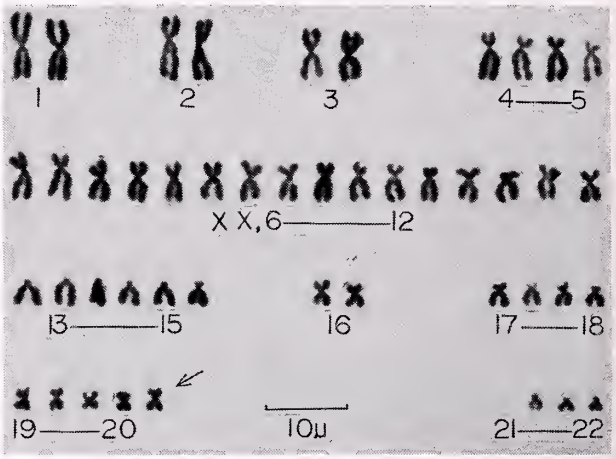


Figure 1. Karyotype of the propositus showing a deleted 21-22 (G group) chromosome, but with an extra metacentric (arrow) resembling the F group.

chromosomes of the F group (Fig. 1). Frequently this chromosome resembled a number 16 in size. We interpret the propositus as being effectively trisomic for a G group chromosome with the supernumerary member being either an isochromosome 21 or a translocation of one G onto another to form a small metacentric.

Karyotypes were then prepared from multiple blood cultures of both parents. The father exhibited a modal number of 46 and a normal male

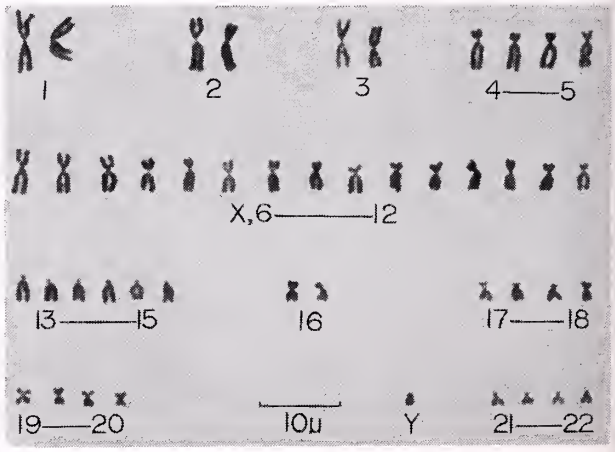


Figure 2. Paternal karyotype, normal.

karyotype (Fig. 2). On the other hand, 30 plates analyzed from 100 scored on the maternal blood preparations consistently showed 45 chromosomes with only 2 in the G group and an additional small metacentric resembling members of the F group (Fig. 2). In view of the mother's

phenotypic normality, we interpret her karyotype to be essentially balanced, the additional small metacentric representing either an isochromosome 21 or a G/G translocation. The finding of a similar G/G element in the karyotype of the affected daughter is presumptive evidence for the transmission of the chromosome at oogenesis.

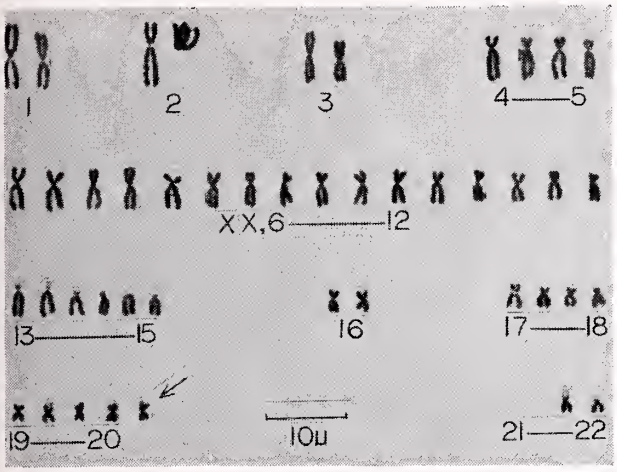


Figure 3. The maternal karyotype showing an additional small metacentric chromosome (arrow) in the absence of two members of the G group (21-22).

Suspicious of the history of the several abortions on the maternal side of this family, as well as considering the possibility of transmission of the G/G chromosome to other sibs, it appeared desirable to extend our study to the entire family, both parents and sibs, of the mother of the propositus. Chromosome analyses from leukocyte cultures were performed on the maternal parents and five sibs, the only omission being a female who was not available for study and who since has delivered a normal child. Normal karyotypes were obtained for all members of the maternal family and, therefore, it appears that the carrier state originated de novo in the mother of the propositus. This study does not offer an explanation for the seven abortions encountered by her parents, although the possibility of an inter-tissue mosaicism cannot be ignored.

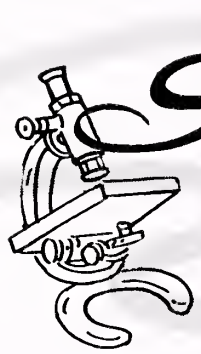
Discussion: Although by definition[1] Down's syndrome is the result of a trisomic occurrence of chromosome 21 there are no criteria to distinguish one member of the G group from another. Our case, then, presents the problem of identifying the carrier chromosome as either a 21/21 translocation, a 21/21 isochromosome, or a 21/22 translocation. The possibility of a 22/22 translocation seemingly can be dismissed on the basis of reports[7, 8] describing G/G translocations in the absence of clinically defined Down's syndrome. Pfeiffer[9] has described a familial G/G translocation and concludes that it is of the 21/22 type by virtue of the pattern of transmission through three generations. Lacking other suitable criteria, identification of the chromosomes involved rests at this time upon segregation of the G chromosomes in the offspring of G/G carriers.

The mother of the propositus has had only two pregnancies, the first resulting in a spontaneous abortion and the second in a child with Down's syndrome. While these products of conception do satisfy identification of the aberrant chromosome as being a 21/21 translocation, they may also occur in the 21/21 isochromosome and 21/22 translocation mechanisms of transmission.

This case illustrates several significant reasons for cytogenetic analyses. The increased incidence of cases of Down's syndrome correlated with advancing maternal age is well documented. Certainly the vast majority of the occurrences of this 21 trisomic condition, whether simple or translocations, are of a non-familial type particularly if the afflicted child has been preceded by normal sibs. On the other hand, as in the present case, a suspected Down's syndrome born to youthful parents should be immediately subject to chromosome analysis to confirm the diagnosis and identify the type of trisomy represented. The existence of a translocation dictates the necessity for chromosomal analysis of the parents to rule out the possibility of a carrier chromosome in a balanced or otherwise phenotypically normal parent. Once the carrier chromosome has been identified the probabilities of its distribution in ova or sperm of the transmitting parent can be predicted and this information may then serve as the basis for family counseling. As in the present case, analyses should also be extended the parents and sibs of the carrier parent to rule out the possibility of the aberrant chromosome having been of earlier familial origin and, therefore, possibly transmitted to other offspring in a carrier state. Again, the usefulness of this information in family counseling is self-evident.

Conclusions: A case of Down's syndrome with a G/G chromosome has been described and its origin traced to the maternal parent. Since the only two products of conception in this family have resulted in an abortion and a Down's syndrome, we consider, but cannot confirm, the possibility this case represents a 21/21 translocation.

(Continued on Page 27)



Scientific PAPER

Recurrent Giant Cell Tumor of the Radius*

by

Robert E. Van Demark, M.D.
Robert D. Bloemendaal, M.D.
Sioux Falls, S. Dak.

Giant cell tumor of bone is a well recognized entity. It occurs most frequently in the epiphyses of the long tubular bones, particularly the distal epiphyses of the femur and the radius and the proximal epiphysis of the tibia. It occurs most frequently in the third decade and is slightly more common in females than in males. The recommended treatment is removal of the tumor by curettage and filling the defect with bone chips. This treatment is not entirely satisfactory as evidenced by the fact that more than 50% of these tumors recur, varying with the histological grading of the tumor. The location of the tumor is of some significance as to frequency of recurrence. The distal end of the radius appears to be a favorite location for return of the lesion after curetting. The treatment of recurrent giant cell tumor is potentially difficult, particularly if there has been radiation damage to the surrounding structures, if the surrounding bony cortex has been destroyed, or if there have been multiple surgical procedures and the soft tissues have been seeded with tumor. It has been estimated there is a 20% chance of malignant transformation in these recurrent tumors and the surgeon must choose the procedure that is aggressive enough to cure the patient, but not so aggressive as to cause extreme disability. Each recurrent giant cell tumor is a distinct and individual problem.

In the following case, the treatment of a recurrent giant cell tumor of the distal right radius in a right-handed individual was individualized in an attempt to retain a functioning hand, a movable wrist and forearm.

* Case presentation at the semimonthly Clinical Pathological Conference at Sioux Valley Hospital on March 20, 1965.

CASE REPORT

A white female, age 31, was seen with a swollen and painful right wrist of one and one-half years duration. She gave a history of having been operated upon 11 months previously; a diagnosis had been made of a giant cell tumor, the cavity curetted and filled with bone chips. The bone chips had gradually been absorbed. The patient had had several X-ray treatments with no effect on the destruction of the bone graft.



Figure 1. Recurrent giant cell tumor of the right radius with cortical resorption and increasing destruction of the bone graft.

Physical examination at this time revealed a painful and swollen right wrist with some shortening of the radius. Motion at the wrist was almost totally absent with marked restriction in pronation and supination of the forearm. Roentgenograms showed the old area of bone grafting with absorption of the grafts in the lateral and distal aspect and cortical destruction. Patient was advised to protect the wrist and report back in another month for an X-ray (Fig. 1) which showed increasing resorption of the distal end of the radius. Hospitalization was then advised.

At surgery the distal extremity of the right radius was removed extraperiosteally (Fig. 2) and was replaced with the proximal end of the left fibula. An intramedullary nail was placed through the graft and into the proximal radius; two screws were fixed across the line of junction between the graft and the radial shaft. A Kirschner wire was placed through the distal graft into the ulna to stabilize it in good position at the distal radial ulna area. Bone chips were placed about the line of juncture between the radial shaft and bone graft.

The patient's postoperative convalescence was uneventful. The cross fixation pin was removed approximately 4 months after surgery. Despite the immobilization in a cast, the patient had



Figure 2. Transverse section through the gross specimen which was removed extraperiosteally.



Figure 3. Postoperative roentgenograms showing the fibular replacement of the distal radius.

approximately 20 degrees of flexion and extension at the wrist from the optimum position of function. Pronation and supination of the forearm was limited to about 20 degrees. The wrist is stable, as are the tendons about the graft. Apparently the tendons are well adapted to their new position and their release from the previous bony attachments may be a factor in the absence of pain in the wrist. At present the patient's X-rays (Fig. 3) show the graft to be incorporating well at the line of juncture with the radial shaft and the X-ray check-ups are good in all respects.

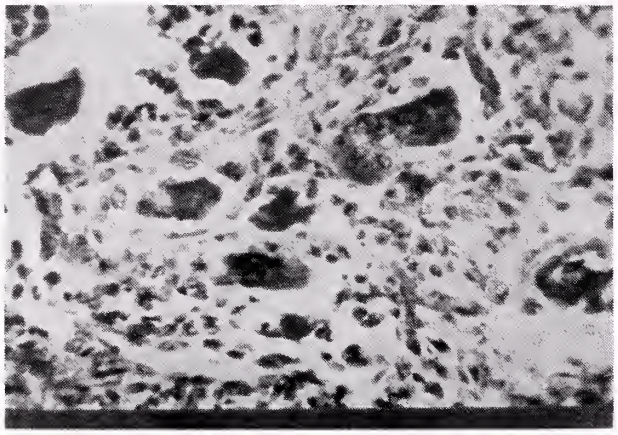


Figure 4. Microscopic section (magnification x 350) showing the microscopic section from previous surgery showing a benign giant cell tumor.

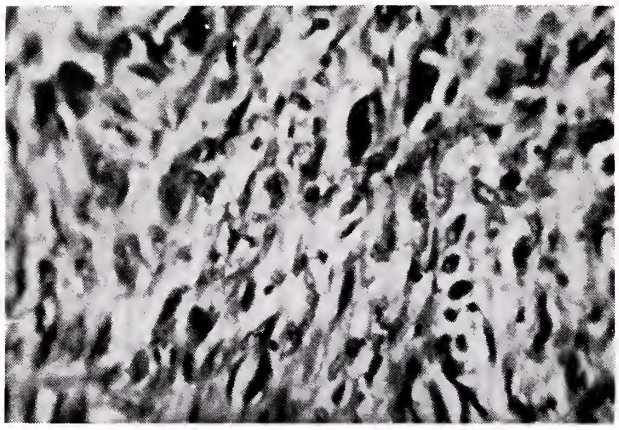


Figure 5. Microscopic section (magnification x 350) showing increased stromal activity of the tumor.

On the original curettings the tumor showed an abundance of multinucleate giant cells with a fibrous, cellular stroma containing moderate numbers of ovoid and spindle-shaped cells with rare mitotic activity. Sections of recurrent tumor showed giant cells in approximately the same numbers but with a considerably more cellular stroma composed of cells with crowded, plump nuclei and showing as many as 6-8 mitoses per high powered microscopic field. There was both gross and microscopic early invasion of the articular cartilage of the distal radius as well as the cortical bone and expanded periosteum of the distal shaft. (Fig. 6).

Histologic grading of the stroma of the lesion into three classifications I, II, and III, according to whether the stromal cells show no atypia, moderate atypia, or atypia of a frankly sarcomatous nature has been recommended by Jaffe. On this basis the original tumor is judged to fall into class I which in Jaffe's experience has a recurrence rate of about 40%. The recurrent tumor is classified with group II which in Jaffe's cases has an anticipated recurrence rate of about 60%. Therefore, on a histologic as well as clinical basis it is felt that the more radical surgical approach to the recurrent tumor was justified.

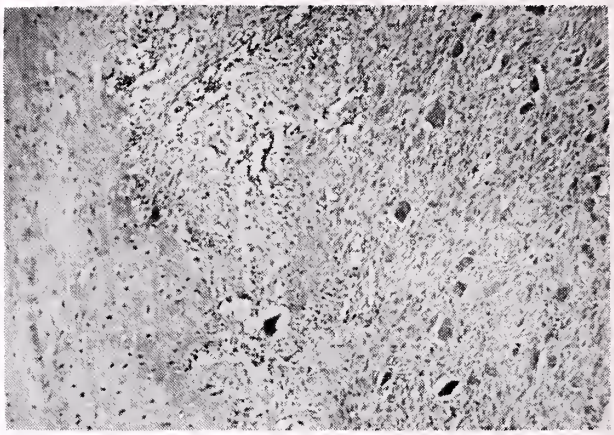


Figure 6. Microscopic section (magnification x 100) showing the tumor and periosteum with complete destruction of the cortical bone in this area.

SUMMARY

Giant cell tumors recur in more than half the cases following surgical treatment with curettage and filling the cavity with bone chips. The recurrence rate is higher in the radius than in other bones, the tibia being the least frequently involved with recurrence. The treatment of the recurrent giant cell tumor must be individualized in each case. In the case reported herein, a recurrent giant cell tumor in the distal right radius of a right-handed individual, the treatment of choice was total extraperiosteal resection of the tumor and replacement by the proximal end of the fibula. A good functional result has been obtained with increased motion at the wrist and forearm and good function in the hand. A brace is being used to protect the graft until revascularization is complete.

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Depression: Its Diagnosis, And Treatment With Combined Drug Therapy

by

Walter M. Gysin, M.D.*

A major change in the treatment of depression has occurred in recent years. Before the antidepressant drugs became available, electroconvulsive therapy with hospitalization was the usual treatment. With the development of antidepressant drugs, however, more patients have been able to be treated as outpatients, and the general practitioner has assumed a more important role in the recognition and treatment of depressive reactions.

Since the depressed patient presents symptoms characteristic of many types of organic diseases, his depression is frequently misdiagnosed or not immediately recognized. It seems worthwhile, therefore, to touch on some of the most frequent symptoms of depression. Generally, sleep disturbance with mood swings occurs, with the patient either feeling much worse in the morning upon awakening or in the evening; the latter seems characteristic of the psychoneurotic patient. Weight loss is almost universal. Close questioning usually reveals that the patient has difficulty making decisions or at least has to drive himself harder than before his illness started. Severely depressed patients often mention a feeling of hopelessness; in my experience, this seems to occur more often than guilt feelings or suicidal preoccupations. Practically every depressed patient complains of such somatic symptoms as anorexia, headache, tachycardia, or g.i. disturbances. Other symptoms — guilt feelings, crying, agitation, fatigue, nihilism — may or may not be present. With the antidepressive drugs available today, it is often difficult to choose the most suitable one for an individual patient. When drug therapy is indicated in depression, rapid onset of action is important, especially for outpatients. Since the possibility of suicide is always present, one

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should be able to assure a patient that he will begin to feel better within a comparatively short period, such as five to seven days. One cannot expect him to wait three to four weeks before experiencing any relief of symptoms.

In my experience, the MAO inhibitor, tranylcypromine, has been an effective and rapid-acting drug. Over a two-year period, 79 patients have been treated with it in combination with the tranquilizer, trifluoperazine; in many depressed patients, prominent distress from anxiety and agitation is also present.

Of the 79 patients, 58 were outpatients and 21 were hospitalized patients; their ages ranged from 18 to 71 years. Diagnoses included the following, with prominent elements of depression: manic-depressive psychosis, depressed phase; involutional psychotic reactions; reactive, agitated, and postpartum depressions; schizophrenic reactions. Duration of illness ranged from less than one month (10 patients) to more than one year (7 patients).

We saw nearly half the group (35 patients) for the first time after they had been ill for two to three months. Some had not had their depression diagnosed during the first weeks of their illness; others had not sought medical help until their symptoms became severe. Depressed patients will try to "work it out" by themselves; only when they fail, do they realize that medical help is necessary.

Nearly two-thirds (49 patients) had received antidepressants, tranquilizers, or ECT for their previous or current depressive reactions; the rest had not. Several had been hospitalized for previous depressive episodes.

Routinely, therapy was initiated with 10 mg. of tranylcypromine and 1 or 2 mg. of trifluoperazine, t.i.d.; the higher trifluoperazine dosage was given to the more anxious or agitated patients. During initial therapy, a mild nonbarbiturate sedative, such as Noludar, was given h.s. to assure restful sleep. After two to four weeks on this regimen, dosage could, with improvement, be reduced to 20 mg. tranylcypromine and 2 to 4 mg. trifluoperazine daily. With further improvement, dosage was reduced again after another four to six weeks to a single daily dose of 10 mg. tranylcypromine and 1 or 2 mg. trifluoperazine. This dosage was continued for at least six to twelve weeks.

Most patients did not notice any change in the way they felt when their dosage was reduced the first time, but they did notice a transient change, a slight aggravation of symptoms, when it was reduced the second time to a single daily dose (10 mg. tranylcypromine and 1 or 2 mg. trifluoperazine). To prepare the patients for this effect, it is well to tell them ahead of time about the possibility of this occurrence.

The over-all response to this combination of drugs was favorable. Forty-seven (59.5%) patients showed marked improvement, that is, they showed a complete or nearly complete remission of symptoms; 25 (31.6%) showed a partial remission of symptoms. Three patients showed only minimal improvement, and four did not improve at all.

Response to therapy usually began to occur within a week. This relatively rapid onset of action, which other investigators (1-4) have also noted with tranylcypromine, makes it a particularly useful drug to administer to the ambulatory depressed patient. Used with a tranquilizer, it enabled us to maintain as outpatients, patients who previously would have had to be hospitalized if they had not begun to show improvement within the first five to seven days.

Side effects were not a problem with these two drugs in combination; they were well tolerated. Insomnia (8 patients) was the most common side effect and disappeared with continued therapy or with the administration of a mild hypnotic. Four patients complained of moderate headache which also disappeared spontaneously. There were one or two complaints of dry mouth, blurred vision, jitteriness, dizziness, and drowsiness.

In my experience, the administration of tranylcypromine with small doses of trifluoperazine was effective in relieving depressive symptoms in over 90% of 79 hospitalized- and out-patients. This combination was well tolerated and produced fairly rapid improvement in both the agitated and hypoactive depressed patient. The concomitant use of a tranquilizer, trifluoperazine, seemed to prevent aggravation of pre-existing anxiety or agitation.

In a subsequent series of 75 similarly depressed outpatients treated with these drugs or with other antidepressants, equally favorable results were observed. In only 6 patients was it necessary to prescribe ECT; the others improved on drug therapy alone.

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THE STOCK MARKET AND YOU

A TIME FOR CARE

Courtesy of J. M. Dain & Co., Inc.
Sioux Falls, South Dakota
By: Milton H. Gaster
Registered Representative

Recent developments in the economy and the international monetary field and in the stock market make a re-assessment of investment policy appropriate. Our conclusion is that now is the time for care and selectivity — not necessarily cutbacks in common stocks — but rather care to be sure that portfolios have appropriate quantities of fixed income securities, care that stock groups have not gotten out of line with changing markets or buying whims, care that glamour stocks or the "movers" of recent months are not held in disproportionate quantities, care that you are not over-weighted in cyclical stocks and care that you have sufficient quality.

Economic Climate

Business activity has been recording new highs month after month. The expansion has been rapid, well above our long run trend line, but it has been orderly. It has benefited from a sizable income tax cut at both the personal and corporate levels. Capital spending has been moving up vigorously and the consumer has been spending confidently even though savings rates recently have been above normal. Until recently inventories have been accumulated at a modest pace.

In recent months, however, automobile production has been averaging at the annual rate of 10 million units and total inventories have started to rise at an above-average pace. It is doubtful that automobile production will maintain this rate for the full year or that inventories will continue to be accumulated at the current pace, so here are two areas of possible slack in prospect later in the year. While the consumer will probably continue spending at a normal percentage of his income, the effect of the tax cut is gradually petering out. Capital spending is expected to continue upward, and thus should be a strong factor for the rest of the year. This should help offset other areas of weakness. It could well be that other sections of the economy will also help pick up the slack.

During most of the expansion phase there have been few signs of weakness. Now there are a few. We do not visualize a recession in the foreseeable future, but there is a possibility of a somewhat slower rate of economic growth for the balance of the year.

International Situation

The international balance of payments took a severe turn for the worse in the final months of 1964 which has resulted in a number of steps including a somewhat tighter monetary policy after a number of years of easy money. Recent moves have improved the deficit from the critical fourth quarter of 1964, but we are far from a solution. Easy money and abundant credit have been partly responsible for the remarkable economic performance of recent years. If we have a continuing adverse balance of payments, it is probable that the credit screws will be tightened further to prevent gold from flowing to countries where interest rates are higher. Traditionally such a development has had the effect of slowing down economic growth. Again, this cannot be predicted with any degree of certainty, but the possibility seems stronger now than in the past.

Stock Market Developments

Popular stock averages have recorded steadily advancing prices from mid-1962 to the present. We don't feel, however, that the "averages" have been representative of the "market" or of a typical individual's investment portfolio. Many, many stocks and stock groups have lagged far behind. Almost as if the gong rang on New Year's Day, market interest broadened dramatically. So far in 1965 the "market" appears to have far out-performed the "averages." This development may largely be a catching up process. Most of the secondary stocks are still selling at discounts from higher quality counterparts. Thus this trend does not indicate anything particularly disturbing.

Concurrently there has been an increase in speculative activity which for certain individual stocks has been pretty extreme, but speculation is still not rampant. A third development has been the increase in the number of secondary offerings, again not approaching the flood pro-

portions of 1961, but nevertheless a definite pick-up. In addition, mutual fund sales are running sharply ahead of last year. These signs do not yet portend to be danger signals. They do indicate, however, that the public is back in the stock market with both feet after being on the sidelines since mid-1962.

Approach

If you find your portfolio is over-balanced in certain areas and are planning a cutback, what should you buy? There are many attractive areas. Bank stocks are excellent defensive issues and offer good long-term growth. Household products companies, cosmetics and apparel companies which have racked up records of steady growth and should get additional benefit from the rising population of young adults; most of these stocks are reasonably priced. In the utility field the natural gas stocks and the moderate-growth electric utilities offer good investment value. The oils have been taking a beating and are now at levels where yields are attractive. Many scientific stocks are more reasonably priced than in past years. Several metal stocks look interesting for purchase as long as you're not over-balanced with cyclical stocks . . . . in short, now is the time to be sure that proven principles of investment management have not been overlooked in your portfolio and to consider making any changes necessary to bring it into line with longer term objectives.

Also many informed investors have been cutting back the percentage of commons in their portfolio and investing proceeds in tax-exempt municipal bonds.

Currently investors can purchase municipal bonds and receive an attractive net yield of about 3.25 - 3.50%. This income is exempt from both Federal and State income taxes.

THOMAS W. MURPHY, M.D.

1878 - 1965

Thomas W. Murphy, M.D., long time Bristol physician, passed away at the age of 87. Dr. Murphy was born January 22, 1878, at Lawler, Ia. He graduated from the University of Iowa Medical School in 1903 and started his practice of medicine in Alexandria. He then moved to Pierpont and later to Bristol where he practiced for many years.

He was a member of the American Medical Association and the South Dakota State Medical Association.

He was preceded in death by his parents, wife, one son, five brothers and four sisters. His survivors include three sons, Dr. Robert of Kansas City, Mo.; Ralph of Denver and Richard of Winona, Minn.; and one brother, Frank of Mason City, Iowa.

ARNOLD K. MYRABO, M.D.

1917 - 1965

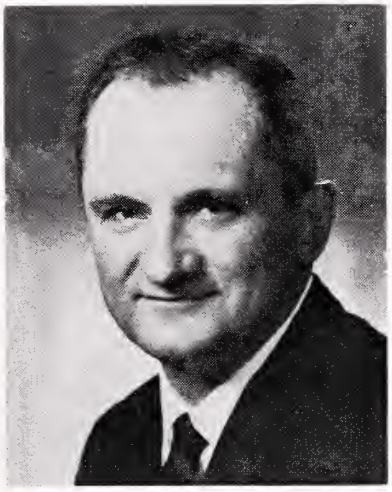
Arnold K. Myrabo, M.D., a prominent Sioux Falls physician, passed away June 2, 1965, at the age of 48.

Dr. Myrabo was born February 24, 1917 at Canton, South Dakota. He later attended the University of Nebraska, College of Medicine, in Omaha, and graduated in 1942. He served in the United States Naval Reserve for three years.

He was an active member of the South Dakota State Medical Association, a member of the State Association's Commission on Internal Affairs, Sub committee on Budget and Audit, and the American Medical Association.

His survivors include his widow, one daughter and four sons.

PRESIDENT'S PAGE



Dear Fellow Members:

It was very gratifying to see so many doctors in attendance at the State Medical Meeting. The host Watertown District Medical Society carried out their segments of the functions very well. It seemed that all the business and scientific meetings always had a very good attendance of Watertown doctors who were always ready to help with information or services to make the doctors and their wives very welcome and well cared for. The facilities were excellent which led to a very successful State Meeting.

The innovation of a joint meeting with the Auxiliary was a wonderful idea. It is time to realize, which we usually do, that man must be treated as a whole and not as a separate segment of his whole makeup. The speakers may have been a little provocative at times, but the message rang out loud and clear. Surely such an attendance as was present, should bring comments for a repeat performance next year.

With the State Meeting of 1965 over, we must now turn to the more normal business of our Society and its members. The commissions type of committees seems to have had a very good start in its first year of inception. We shall try and resolve some of our inadequacies by reappointing only those members who are willing and want to serve on the respective commissions.

Your President was graciously received by the Chilean Ambassador. The funds which you so freely contributed for our fellow doctor in Chile, were presented to the Ambassador, who accepted it with thanks and appearance of delight. Our South Dakota Senators took out time from their busy schedule to be present at the Chilean Embassy. The time was limited but part of it was used to further acquaint the Senators with the present thinking of the South Dakota doctors, as pertains to the present congressional business at hand.

The attending of the National AMPAC Workshop in Washington brought to light the inadequacies of the doctors of our nation, in neglecting to be active in our politics for good government and especially for good private medical care for our patients. Many Senators and Representatives gave lectures at the Workshop, thus clearly outlining for us that which should have been done. They also clearly described the unusual workings of this present Congress which can but lead to sure loss of the type of government we have so long cherished. They all reiterate that all is not lost, and that a vigorous, unified campaign will salvage much, and possibly revert back to near normal some of the changes now taking place.

Fraternally yours,

Paul Hohm, M.D.
President



HOW ABOUT A "HEALTH SERVICES UNITED"????

During an average year there are between 30 and 40 solicitations for money by various organizations in many communities of this state. These range from the Saturday street corner requests for small contributions to the large scale capital fund drives for hospitals, community buildings, baseball stadiums, and the like. From the viewpoint of the giver it often seems that each year brings a horde of new enterprises with outstretched hands, asking for money. Most civic-minded citizens try to give financial or other assistance to as many worthy causes as possible but prefer to give special recognition to the charity of their choice. In the instance of a salaried worker, the repetitious solicitations can cause problems.

To consolidate the miscellaneous donations of its citizens, many communities have organized Red Feather Drives, Community Services programs, and United Funds. These combined appeals have helped reduce the total number of solicitations to a considerable extent, but have not fully satisfied their purpose primarily because some organizations, especially those in the field of health services, have refused to join the United Campaigns.

When representatives of the health service organizations are asked why their unit does not join the United solicitations in the individual communities, a multiplicity of reasons are given. These include the excuse that "we lose our identity", "we do not take in as much money when in the United Funds", "in the United drives the lesser health funds are riding on our coat-tails and get more than their share of the money", "we intend to remain independent until our purpose is served and then disband." All of the thoughts given by the health groups revolve more about their fear of not making enough money **individually,** rather than demonstrating any concern for coordinated, efficient operation which might make it possible to put to work more of the money collected, by avoiding duplication of efforts.

Some of the health fund organizers point with pride to the fact that their drives, solicitations, crusades, marches, do not cost very much because "all the work is done by volunteers." They lose sight of the fact that the time of the "volunteers" is a highly valuable commodity and something which if paid for, would cost a tremendous sum. It is notable that in most communities the "volunteers" for the different drives are usually the same individuals, over and over again. In many instances now the "volunteers" are beginning to be less cooperative about working in the different campaigns, having reached the "drive" saturation point. The donors of today in their individual homes and businesses are often less generous than they were in the past, due to their United Fund contributions and to excessive solicitations.

The question must be asked whether the various community health funds would not be bettered by combining their facilities and their solicitations, eliminating areas of duplicated efforts. Instances of overlapping functions within the individual organizations as well as duplication of functions between the different organizations exist now and will continue unless changed. To be sure, the suggestion for abolition of executive status in the health service organizations by consolidation and elimination, will not result in an accolade from the professional fund raisers. However, this is one area wherein greater efficiency can be achieved and perhaps more dollars funneled into the intended public service purpose, rather than into administrative channels.

Also, it is time to begin thinking about coordination of health services programs for the entire country. The development of centralized government has proved the tenets of Parkinson's Law, which states that bureaucracy grows, multiplies itself, and develops new reasons for existence, despite the fact that its original purpose has ceased to exist. It is notable that the health services follow this pattern, that is of seeking new goals, new diseases to treat, when their primary function has been realized, rather than ceasing to exist. If the health services can be merged, combined, and coordinated on a national level, and then solicitations made in the individual communities through a HEALTH SERVICES UNITED or through the community United Funds, the duplication of effort in both the low and high echelons, the endless solicitations, and the possibility of dishonesty, could be drastically minimized, with an overall benefit to the nation.

J. B. Gregg, M.D.

WOMAN'S AUXILIARY

To the American Medical Association, Inc.

May 20, 1965

James P. Steele, M.D.
Past President
South Dakota State Medical Association
711 North Lake Ave.
Sioux Falls, South Dakota

Dear Dr. Steele:

This is to express my appreciation for the invitation to attend the beautiful buffet dinner which you and the society sponsored for the Auxiliary. It was a very lovely affair and it was too bad that the men could not have been with us.

The mere words "thank you" do not seem to be adequate for all the attentions I received while attending your meeting, but I do wish to express my sincere thanks for all your wonderful hospitality.

I sincerely hope that we will see you in New York. We will have "open house" and I do hope you will call upon us at any time during the convention.

Cordially yours,

Mrs. William H. Evans
President

(Continued from Page 17)

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2112 Nebraska Street
Sioux City, Iowa

June 1, 1965

Dear Mr. Erickson:

I am writing a slightly belated note to thank the South Dakota State Medical Association for the $100.00 grant awarded to me in April. I plan to use the money for books and equipment for my next two years of Medical School. Thank you again.

Sincerely,

Barbara Schulte

HARVARD MEDICAL SCHOOL

Mr. Richard C. Erickson
Executive Secretary
South Dakota State Medical Association
711 North Lake
Sioux Falls, South Dakota 57104

June 2, 1965

Dear Mr. Erickson:

My expenses for the trip to South Dakota for the Annual Meeting of the South Dakota Medical Society and the South Dakota Academy of O & O on May 17, 1965 were: Air Travel — $209.32.

I would be pleased if you would donate this amount of money to the Medical School Endowment Fund.

Sincerely yours,

HFS/ssf
CC: Dr. John B. Gregg

Harold F. Schuknecht, M.D.

AMERICAN MEDICAL ASSOCIATION

Mr. Richard C. Erickson
Executive Secretary
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota

June 1, 1965

Dear Richard:

Just a little note to thank you for the many courtesies and kindnesses extended to Mrs. Ward and me on the occasion of our trip to Watertown, South Dakota, attending the South Dakota State Medical Association Annual Meeting.

My congratulations to you on a smooth-working organization and your attention to detail. You certainly demonstrated your ability as an organizer as evidenced by the smoothness of your program.

I can further assure you that it was a distinct privilege and an honor for me to be invited to the affairs of your State Medical Association.

Please give my best regards to the people of your Staff and any of the members of the Association whom you happen to meet. Best wishes to you until we meet again.

Sincerely,

dfw:rm

Donovan F. Ward, M.D.

HANDICAPPED CHILD COMMITTEE PREPARES PKU STATEMENT*

It is suggested that this authoritative statement by the Committee of the American Pediatric Society merits reprinting in the **South Dakota Journal of Medicine.** PKU has been so badly publicized by the lay people as to the importance of early testing and wrongly emphasized as to the prevention of mental retardation by the correct dietary regime, law suits encouraged by certain lawyers are not inconceivable. While the physicians are generally aware of the facts of PKU, they should carry out the tests whenever indicated and this article or similar authoritative statement should be on every physician's desk.

W. E. Donahoe, M.D.

A statement on the treatment of phenylketonuria, prepared by the Academy Committee on the Handicapped Child appears in the March issue of PEDIATRICS.

Noting that there is considerable discrepancy of opinion regarding the treatment of phenylketonuria, the Committee outlined areas of agreement and some of the reasons for confusion about treatment. Following are some of the major points, quoted from the statement.

Areas of Agreement on Treatment

- If PKU is detected early, and the infant is started on the proper diet before 6 months of age, and then is "adequately" maintained, the child usually will demonstrate borderline to average intelligence at 5 years of age.
- For the infant being treated with a diet low in phenylalanine, the acceptable concentration of phenylalanine in the serum probably lies above 3 mg/100 ml and below 8 mg/100 ml . . . . Concentrations over 12 mg/100 ml are almost certainly too high to achieve best results.
- For optimum results the diet must be maintained rigidly and constantly . . . .
- Frequent accurate determinations of the concentration of phenylalanine in the serum appear to be an integral part of management . . . . Such determinations may be needed daily at the onset, then weekly or monthly, depending on the parent's ability to carry out prescribed dietary therapy.
- Because of these and other problems of diagnosis and management, most clinics attempting optimal service to children with PKU utilize a multidisciplinary team . . . . of pediatric, social work, psychological, nutritional and nursing (personnel).

Reasons for Confusion about Treatment

Because an adequate and reliable diet first became available in this country only in late 1958 and because early screening tests have only recently come into general use, only a few patients have been discovered within the first month of life. Even they have been treated for less than six years, and this period of time is inadequate for assessing child development and projecting eventual intellectual ability on optimum treatment . . . .

Another difficulty in attempting to interpret results lies in the complete lack of uniformity of opinion as to what constitutes adequate control of dietary intake and what blood levels of phenylalanine should be maintained . . . . The available evidence strongly suggests that the correlation of amounts of dietary phenylalanine per pound of body weight with serum levels of amino acid varies not only from age to age in the same child, but from child to child within the same family, and even more so from case to case in unrelated children.

It is not yet established whether the serum level of phenylalanine in a patient with PKU needs to be as low as that found in the average unaffected child or adult (i.e., below 4 mg/100 ml) or only in the range of the normal-appearing parent and sibling carriers which may vary between 8 and 12 mg/100 ml after a meal of high protein content.

Problems in Dietary Management

It is the experience of those working closely with this disease that maintenance of the diet is easy during the bottle-feeding period. Difficulties arise when the child . . . begins to forage for himself. Here is where parental guidance, discipline of the child, and knowledge of the nutritional content of foods and food substitutes become of crucial importance. Utilization of accurate data on the phenylalanine content of all foods is a necessity for easier and better management.*

A particular problem is that, as yet, there are no truly palatable bread substitutes with consistencies similar to actual bread or toast.

Concluding Comment

Any objective evaluation of the results of dietary treatment of children with PKU must take into consideration a multiplicity of uncontrolled variables affecting the outcome. Included are the differing initial levels of intelligence and phenylalanine tolerance in each child, the differing heredities of each child (even in the same family), and the differing abilities and motivations of parents in maintaining the diet. However, it is clear, as stated earlier, that children with PKU can be helped

*Reprinted from PEDIATRICS, the Journal of the American Academy of Pediatrics, Inc.

if the problem is detected early enough and adequate treatment is begun promptly and maintained adequately.

This conclusion must not lead to unrealistic expectations or to over-enthusiastic application of treatment programs. Some parents are either unwilling or unable to maintain dietary treatment. Over-rigidity of dietary management has led to early death, presumably from insufficient protein intake or hypoglycemia. Over-hospitalization for rigid control has deprived children of the normal stimulation and affection of home and family, thus preventing normal psychological maturation. Exaggerated predictions for normal development regardless of the age of discovery and irrespective of the strictness of the diet or of the hereditary endowment have led to frustration and discouragement on the part of both pediatricians and parents.

Much more data, taking into account all the known variables, must be accumulated and carefully analyzed before definitive statements can be advanced regarding the precise value of diet in preventing or ameliorating phenylketonuria. This will require considerable time. A collaborative study to evaluate management of this disease would be valuable.

Used general medical, surgical and waiting room equipment for sale including Picker X-ray and Ritter Table. Write to R. T. Satterfield, M.D., 724 East Jefferson Street, Millard, Nebraska 68043.

NEEDED — General Physician—Family Internist by four-man group in growing rural program in West Virginia. Modern clinic facilities, regularly visiting specialist consultant staff, scheduled training and vacation periods, foundation sponsorship, no investment required. Starting net income range $14,000-$18,000 depending on qualifications. Box A3, S. D. Journal of Medicine, 711 N. Lake Ave., Sioux Falls, S. D.

Elk Point, South Dakota has an opening for an M.D. (General Practice). Office space available. Contact John Murphy, President, Elk Point Community Club, Elk Point, South Dakota.

WANTED AT ONCE: General Practitioner under 40, tired of solo practice, for association with surgeon, internist and general practitioner in new office building with x-ray, laboratory, minor surgery facilities and all equipment furnished; ½ block from 120 bed acute, general, approved, open-staff hospital in Central Iowa agricultural-industrial town of 25,000, mostly Protestant, county seat; with new nursing home, excellent schools, Jr. College, adult education, art center, concert, theater, housing available and off-time coverage. Box A8, S. D. Journal of Medicine, 711 North Lake Avenue, Sioux Falls, South Dakota 57104.

Sadusk — New Hope of FDA

Patients would be safer if we could return to our old symbiotic, give-and-take relation with the FDA, and recent activity on the part of its new medical director, Joseph F. Sadusk, Jr., M.D., seems to indicate strongly that there is indeed hope that this may be accomplished. — Editorial in **Pennsylvania Medical Journal,** 68:2, (Feb.) 1965.



This is your MEDICAL ASSOCIATION

News Notes • Changes • Births • News

Pop's Proverbs

I pray not for justice but for mercy.

NEWS NOTES

The ninth annual convention of the South Dakota Chapter of the American Association of Medical Assistants was held in Winner, South Dakota May 22-23, 1965. **R. H. Hayes, M.D.,** Winner, was the featured speaker at the installation banquet. **Richard Erickson,** executive secretary of the South Dakota Medical Association and **Randall Tuffs,** assistant executive director of South Dakota Blue Shield both addressed the group.

* * *

Winston B. Odland, M.D., Huron, was elected president of the Academy of Ophthalmology and Otolaryngology at the recent convention of the South Dakota Medical Association in Watertown. **C. E. Tesar, M.D.,** Rapid City, was named vice-president and **William Fritz, M.D.,** Mitchell, secretary-treasurer.

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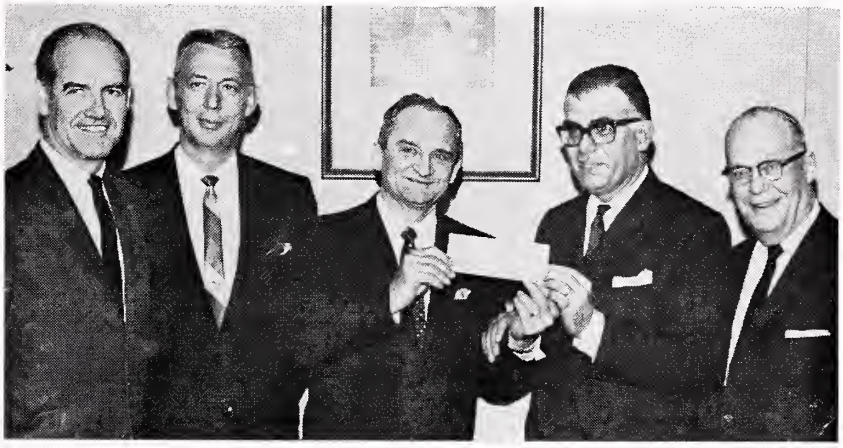
The South Dakota Society of Obstetrics and Gynecology will hold a Clinical Meeting in Sioux Falls, on Saturday, August 21st. Dr. Warren Pearse, Head of the Department of Obstetrics and Gynecology, University of Nebraska, will be the guest speaker. A detailed program will be announced in the August issue of the Journal.

The Aberdeen District Medical Society have had guest speakers at their last two meetings. **Robert F. Ivers, M.D.,** Fargo, North Dakota, presented "Clinical Application of the Electroencephalogram" and **Herbert C. Leiter, M.D.,** Sioux City, Iowa, presented "Skin Cancer — Diagnosis and Therapy." **Samuel Rosa, M.D.** is a new doctor in the area.

* * *

The Ninth District Medical Society held their June meeting at the Ellsworth Air Force Base. They toured a B-52 and a scientific program was presented by Medical Officers at the Base.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED



The South Dakota State Medical Association presented a check for $1,500 to the Chilean Ambassador to the United States, May 22, 1965 for building a home for a physician at South Dakota, Chile.

The check was handed over by Dr. Paul H. Hohm, Huron, President of the State society, to Ambassador Radomiro Tomic in a ceremony at the Chilean Embassy. Also present were South Dakota Senators George McGovern (D.) and Karl Mundt (R.), and Dr. Preston Brogdon, Mitchell, president-elect of the SDSMA.

Sen. McGovern notified the state medical society of the Chilean village's need for a physician's home after receiving a letter from Padre Bernabe notifying him of the town's plight. South Dakota, Chile, was one of many towns destroyed in the Chilean earthquakes and rebuilt with U. S. assistance. Many of these towns were renamed after American states.

The South Dakota State Medical Association held their 84th Annual Meeting at Watertown and elected the following officers: **Paul Hohm, M.D.,** Huron, President; **Preston Brogdon, M.D.,** Mitchell, president-elect; **John Stransky, M.D.,** Watertown, vice-president; **Robert Hayes, M.D.,** Winner, Speaker of the house of delegates. **A. P. Reding, M.D.,** Marion, is the association's secretary-treasurer.

* * *

Officers were elected of the newly formed South Dakota Pediatric Society at the Annual Meeting of the South Dakota State Medical Association held at Watertown. The Officers of the Society are **H. W. Farrell, M.D.,** Sioux Falls, President; **W. F. Stanage, M.D.,** Yankton, President-Elect; and **E. H. Heinrichs, M.D.,** Watertown, Secretary-Treasurer.

The Officers and **J. F. Leeds, M.D.,** Rapid City, president of the S. D. Chapter of the American Academy of Pediatrics, form the executive committee.

* * *

One of the oldest and most familiar landmarks in the history of Sioux Falls as a medical center will disappear with razing of the Sioux Falls Clinic at 11th Street and Minnesota Avenue.

Plans for its demolition next fall were announced by the Physicians' Investment Co., owner of the 45-year old building.

Physicians with offices in the clinic are **Stephen M. Brzica, M.D., G. I. W. Cottam, M.D., Henry F. Davidson, M.D., L. G. Leraan, M.D., C. J. McDonald, M.D., Robert H. Quinn, M.D. and Robert E. Van Demark, M.D.**

W. Keettel, M.D., head of the Department of Obstetrics & Gynecology at the University of Iowa, was the guest speaker at the Watertown District Medical Society Meeting. The Watertown Medical Society was the host society to the South Dakota State Medical Association annual meeting May 15th to 18th.

* * *

NEW ADVERTISERS SUPPORT OUR JOURNAL

The **Armour Pharmaceutical Company, Merck, Sharp & Dohme** and **J. B. Roerig** have begun a new series of advertisements. We appreciate the opportunity of carrying the messages of these companies to our readers.

* * *

Medical School Faculty have a special reason to be appreciative of the contributions made by South Dakota physicians to the AMA-ERF fund in support of the medical school. Action by the Regents of Education have permitted utilization of these funds to be used directly in support of, and added to, the salary budget for the 1965-66 school year. In commenting on this action, Dean Hard observed that this will serve in good measure to bring the salary scales at the University Medical School up to a more favorable competitive level with other medical schools. It should serve to stabilize faculty positions. The contributions made to the AMA-ERF funds for the medical school have been conserved over the past three years in order to meet these salary commitments. The medical school is appreciative of the fine support offered by these contributions.

James P. Steele, M.D., Yankton, outgoing president of the South Dakota State Medical Association, presented awards to members of the Association at the Annual Meeting. The Distinguished Service Award was presented to **A. P. Reding, M.D.,** Marion. Community Service Award was presented to **A. P. Peeke, M.D.,** Volga. Past President's Award was presented to **R. H. Hayes, M.D.,** Winner. Fifty-year pin and certificate were presented to **Myrtle Carney, M.D.,** now of Fort Worth, Texas. The South Dakota Academy of Ophthalmology and Otolaryngology Award was presented to **Harold F. Schuknecht, M.D.,** Chief of Otolaryngology, Massachusetts Eye and Ear Infirmary, Boston. A native of South Dakota and former resident of Chancellor, he is a University of South Dakota Medical school graduate.

* * *

Re-elected to the board were **C. J. McDonald, M.D.,** Sioux Falls; **H. Russell Brown, M.D.,** Watertown; **James Gormley,** Rapid City and **Jerry Hill,** Aberdeen. Other board members are **J. T. Elston, M.D.,** Rapid City; **E. A. Johnson, M.D.,** Milbank; **B. F. King, M.D.,** Aberdeen; **D. H. Breit, M.D.,** Sioux Falls; **T. H. Sattler, M.D.,** Yankton; **Robert Beckwith,** Chamberlain and **Jesse Olson,** Yankton.

* * *

The South Dakota Radiological Society held their meeting at the home of **Charles F. Ryan, M.D.,** Watertown. The following officers were elected: **Saul Friefeld, M.D.,** Brookings, President; **D. Peik, M.D.,** Sioux Falls, secretary-treasurer; and **Donald Woods, M.D.,** Rapid City, counselor.

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slows propulsion · relieves distress · stops diarrhea



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Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect – Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:
3 to 6 months–3 mg. (½ tsp.* t.i.d.)
6 to 12 months–4 mg. (½ tsp. q.i.d.)
1 to 2 years–5 mg. (½ tsp. 5 times daily)
2 to 5 years–6 mg. (1 tsp. t.i.d.)
5 to 8 years–8 mg. (1 tsp. q.i.d.)
8 to 12 years–10 mg. (1 tsp. 5 times daily)

Adults: 20 mg. (2 tsp. 5 times daily or 2 tablets 4 times daily) **Based on 4 cc. per teaspoonful.*

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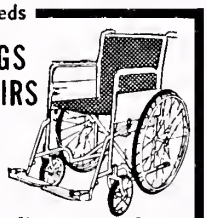
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* * *

Master Diplomacy in Patient Consent

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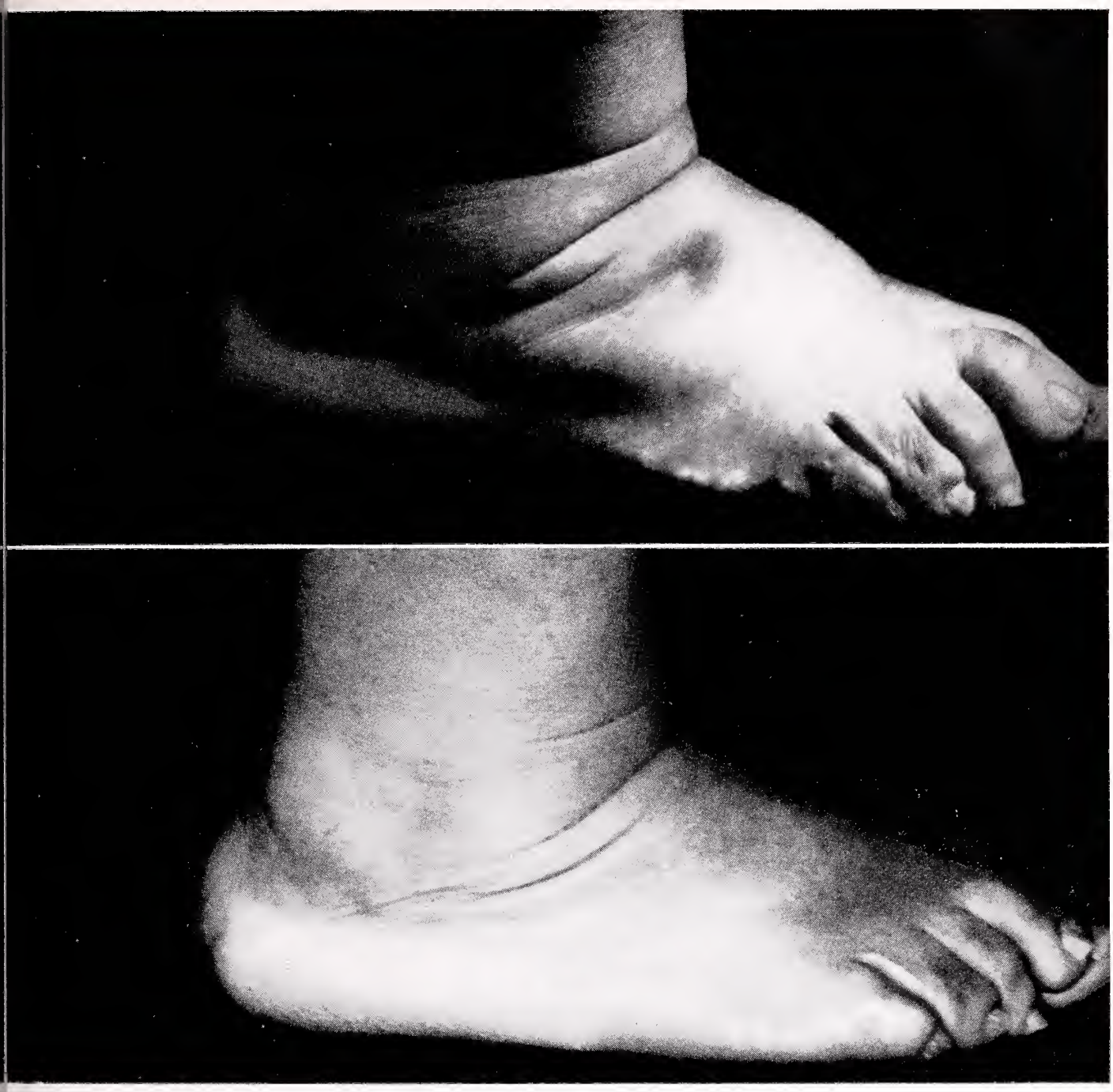
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Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

*Dorhout Mees, E.J., and Geyskes, G.G.: Acta med. scandinav. 175:703, 1964.

Photos: A 59-year-old woman with hypertensive cardiovascular disease and edema resistant to low-salt diet and bed rest. The patient lost 8½ lbs. in one week with a single tablet daily of Hygroton, brand of chlorthalidone.

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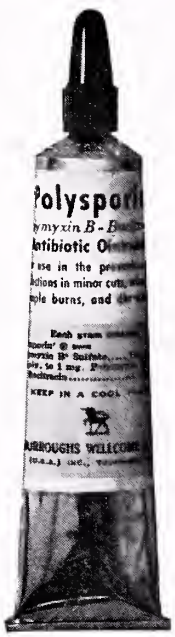
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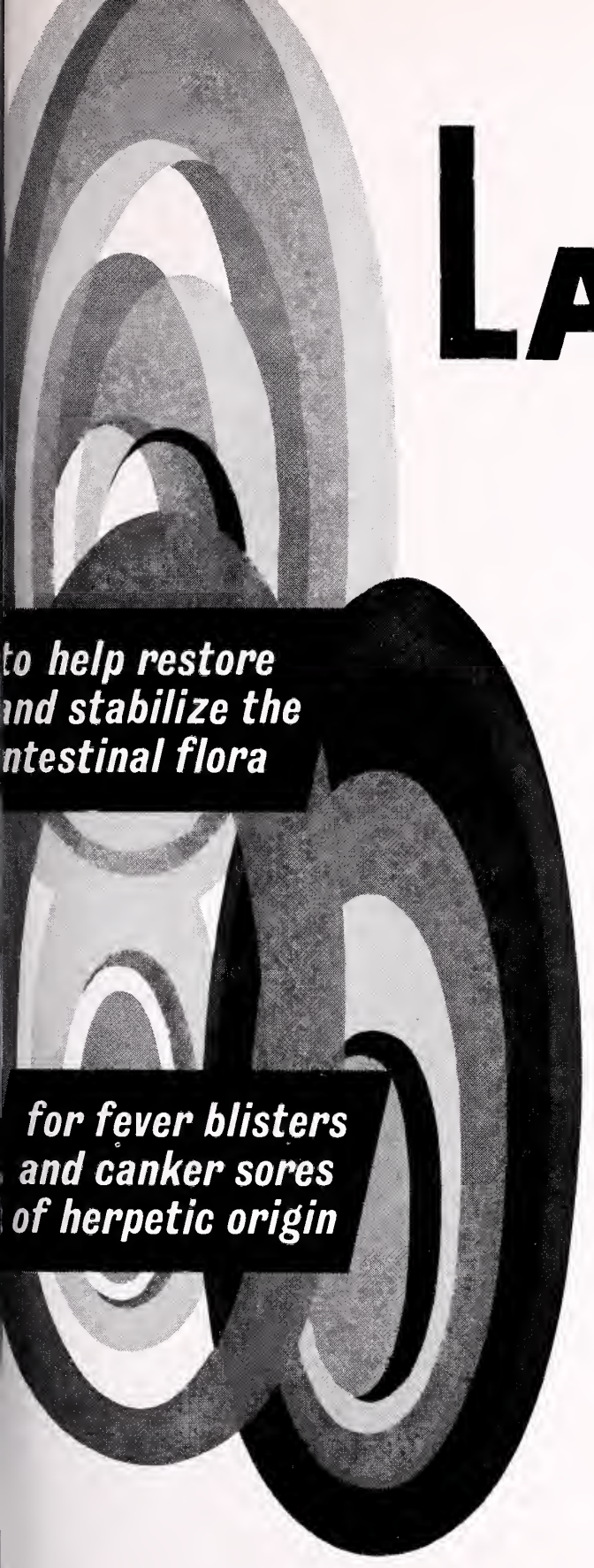
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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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THE SOUTH DAKOTA

JOURNAL OF MEDICINE

JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION AND THE SIOUX VALLEY MEDICAL ASSOCIATION

Volume XVIII **August, 1965** **Number 8**

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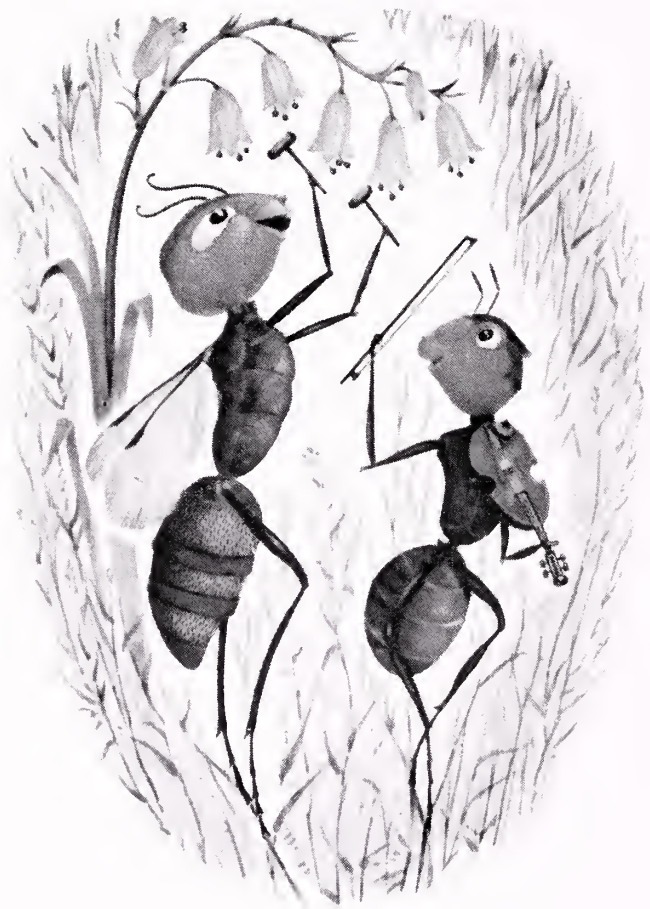
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*This one at Oak Creek, Castle Rock, Arizona

References: 1. Hock, C. W.: Clin. Med. 8:1932, 1961. 2. Marks, L.: Am. J. Gastroenterol. 27:180, 1957. 3. Palmer, W. L., and Kirsner, J. B.: Therapeutics in Internal Medicine, 2nd ed., F. A. Kyser, Ed., Hoeber, New York, 1953, p. 368. 4. Ryan, J. P., Jenkins, H. J. and Robinson, S. M.: J. Pharmaceut. Sciences 53(9):1084, 1964. 5. Vollmer, H.: Arch. Neurol. & Psychiat. 43:1057, 1940. Abst. J.A.M.A. 115:333, 1940. 6. Wharton, G. K., Balfour, D. C., Jr., and Osman, K. I.: Postgrad Med. 21:406, 1957.

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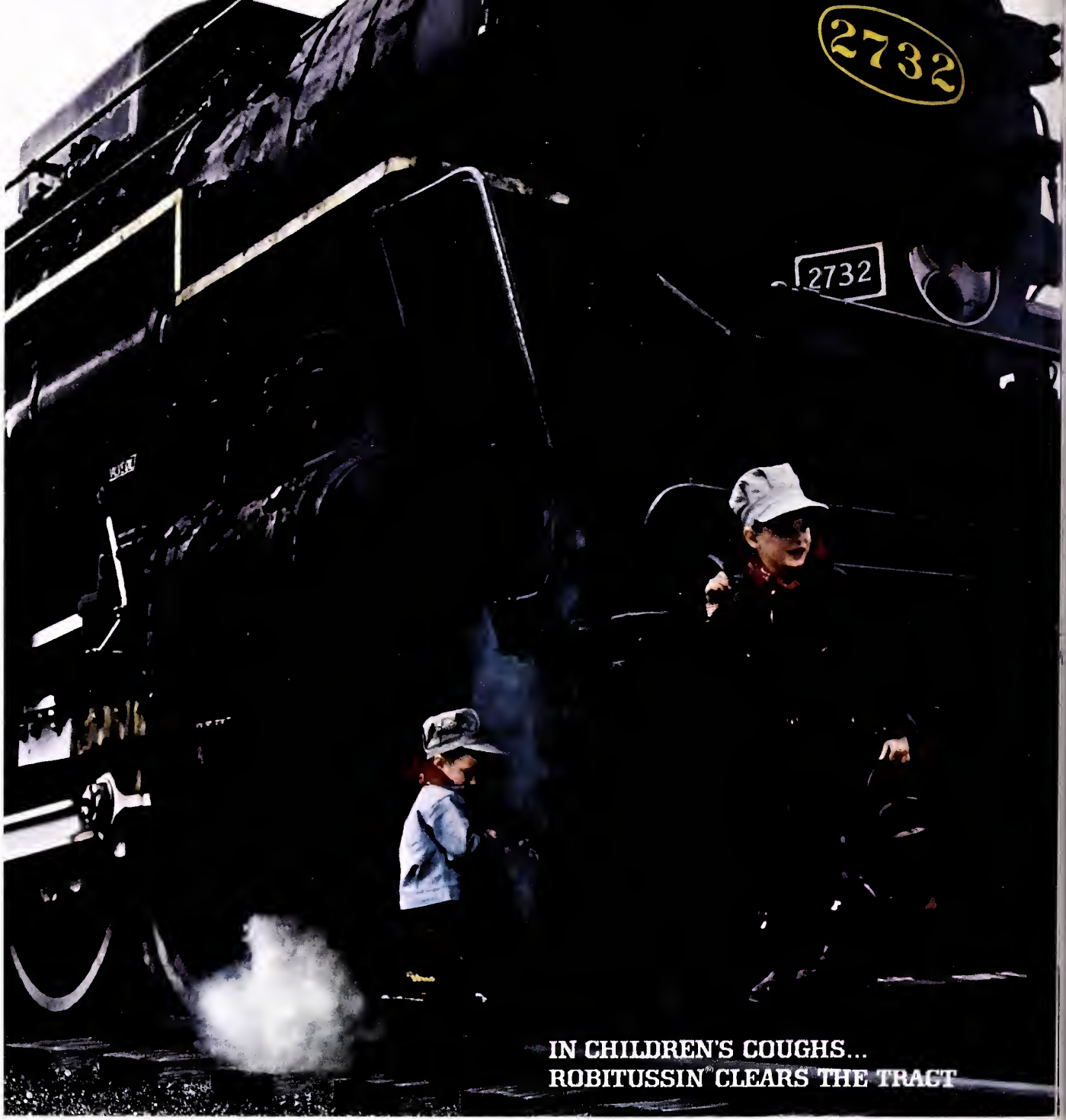


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references: 1. Winfield, I. W.: Am. J. Gastroent., 31:438, 1959. 2. Blanchard, K.: Rocky Mt. Med. J., 54:527, 1957.

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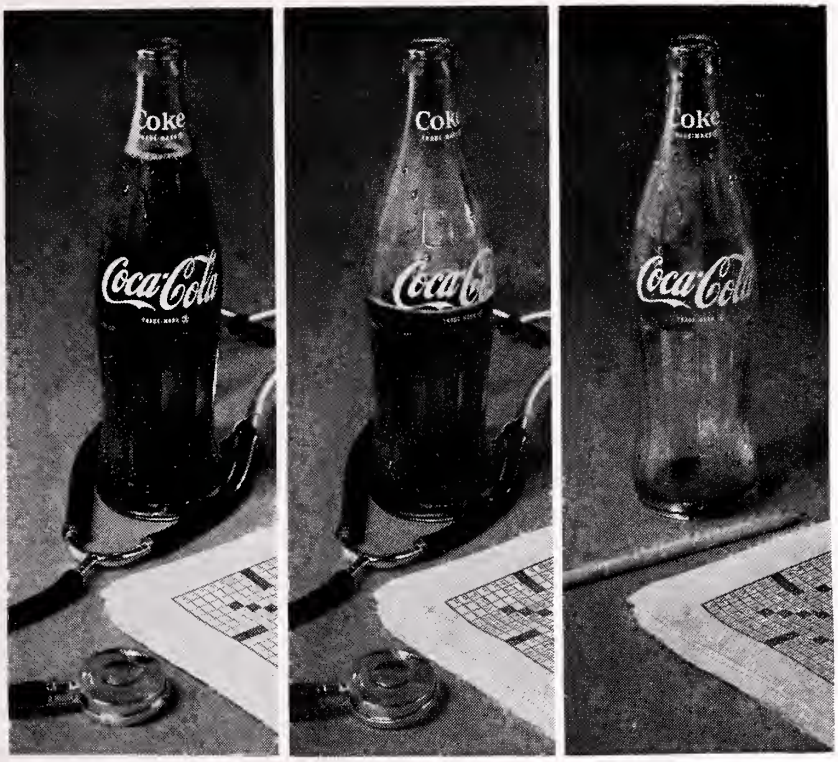
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*Boyd, E.M., and Ronan, A.K.: Am. J. Physiol., 135:383, 1942.

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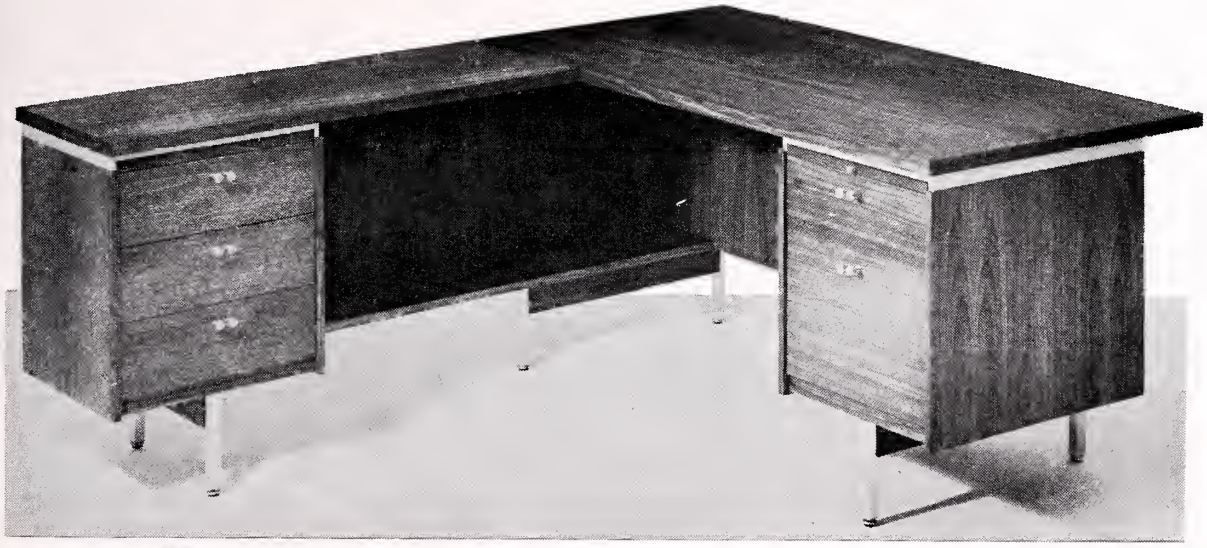


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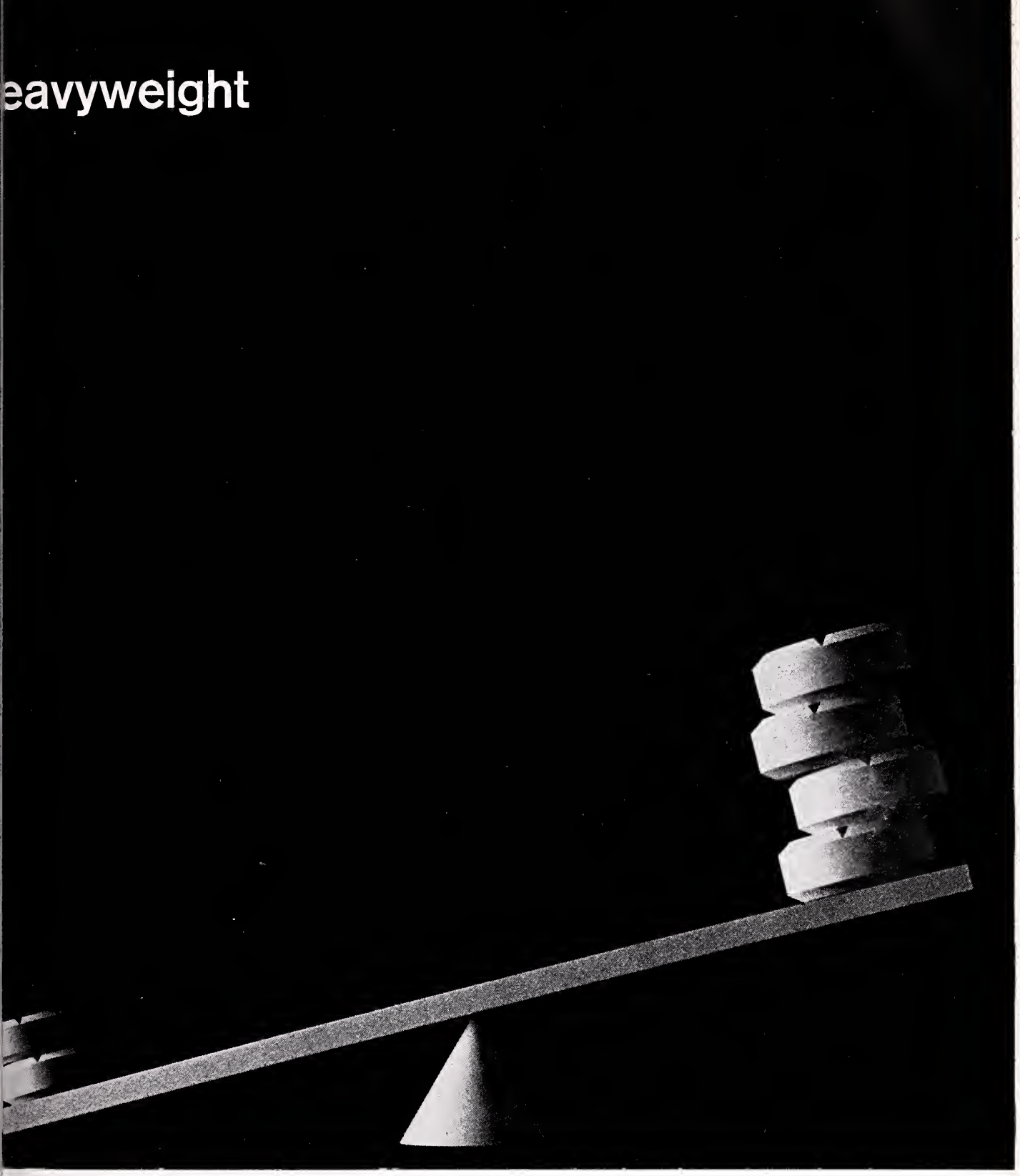
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*Swartz, C., et al.: Circulation 28:1042, 1963.

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Speaker of the House

Robert Hayes, M.D. ..... Winner

Councilor at Large

James P. Steele, M.D. ..... Yankton

COUNCILORS

First District (Aberdeen)

E. J. Perry, M.D. (1965) ..... Redfield

Second District (Watertown)

G. Robert Bartron, M.D. (1968) ..... Watertown

Third District (Brookings-Madison)

M. C. Tank, M.D. (1966) ..... Brookings

Fourth District (Pierre)

A. J. Tieszen, M.D. (1968) ..... Pierre

Fifth District (Huron)

Fred Leigh, M.D. (1966) ..... Huron

Sixth District (Mitchell)

Harvard Lewis, M.D. (1966) ..... Mitchell

Seventh District (Sioux Falls)

E. T. Lietzke, M.D. (1966) ..... Beresford

Eighth District (Yankton)

Clark Johnson, M.D. (1968) ..... Yankton

Ninth District (Black Hills)

J. T. Elston, M.D. (1967) ..... Rapid City

Tenth District (Rosebud)

E. P. Sweet, M.D. (1967) ..... Burke

Eleventh District (Northwest)

H. E. Lowe, M.D. (1967) ..... Mobridge

Twelfth District (Whetstone)

E. A. Johnson, M.D. (1967) ..... Milbank

GRIEVANCE COMMITTEE

1. C. J. McDonald, M.D. (1967)
2. C. Rodney Stoltz, M.D. (1970)
3. A. A. Lampert, M.D. (1966)
4. Magni Davidson, M.D. (1968)
5. R. H. Hayes, M.D. (1969)

EXECUTIVE COMMITTEE

Paul Hohm, M.D.
P. P. Brogdon, M.D.
A. P. Reding, M.D.
J. J. Stransky, M.D.
J. T. Elston, M.D.
R. H. Hayes, M.D.

COMMISSION ON MEDICAL SERVICE — Covering Medical Education and Hospitals, Insurance Programs for the membership, prepayment plans, and Workman's Compensation; Medical Licensure; Rural Medical Service, Traffic Safety, and School and Public Health.

1. John Gregg, M.D., Chairman (1967)
2. Robert Stiehl, M.D. (1967)
3. Harold Adams, M.D. (1967)
4. G. E. Tracy, M.D. (1967)
5. T. H. Willcockson, M.D. (1966)
6. L. H. Amundson, M.D. (1966)
7. Warren Jones, M.D. (1966)
8. J. J. Stransky, M.D. (1966)
9. F. R. Williams, M.D. (1968)
10. R. C. Jahraus, M.D. (1968)
11. A. M. Semones, M.D. (1968)
12. J. A. Anderson, M.D. (1968)

COMMISSION ON SCIENTIFIC MEDICINE — Covering Scientific Programs; Chronic Diseases such as Diabetes, Rheumatic Fever, Heart Disease, Tuberculosis, Cerebral Palsy, Muscular Dystrophy, Cancer, Multiple Sclerosis, Mental Retardation; Mental Health; Clinical Pathology; Rehabilitation; Geriatrics; Maternal and Child Welfare; and Neonatal Care.

1. George Knabe, M.D., Chairman (1967)
2. Bruce Lushbough, M.D. (1967)
3. Robert S. Jones, M.D. (1967)
4. S. W. Fox, M.D. (1967)
5. Robert Nelson, M.D. (1966)
6. J. T. Elston, M.D. (1966)
7. R. B. Leander, M.D. (1966)
8. E. H. Heinrichs, M.D. (1966)
9. Clark Johnson, M.D. (1968)
10. Noel deDianous, M.D. (1968)
11. Judson O. Mabee, M.D. (1968)
12. Robert K. Johnson, M.D. (1968)

COMMISSION ON COMMUNICATION — Covering Radio and TV, Press Relations, Public Relations, Publications, Physicians Placement Service.

1. C. L. Vogele, M.D., Chairman (1967)
2. R. E. Van Demark, M.D. (1967)
3. R. E. Dean, M.D. (1967)
4. Ted Wrage, M.D. (1967)
5. C. A. Johnson, M.D. (1966)
6. Hugo Andre, M.D. (1966)
7. R. R. Giebink, M.D. (1966)
8. B. F. King, M.D. (1966)
9. B. O. Lindbloom, M.D. (1968)
10. H. J. Grau, M.D. (1968)
11. L. K. Cowan, M.D. (1968)
12. H. H. Brauer, M.D. (1968)

COMMISSION ON LIAISON WITH ALLIED ORGANIZATIONS — Covering Nursing Services; Improvement of Patient Care; Medical-Legal; Pharmacy; Voluntary Health Agencies; Dental; Medicine and Religion.

1. M. R. Cosand, M.D., Chairman (1967)
2. C. L. Swanson, M.D. (1967)
3. David Buchanan, M.D. (1967)
4. A. W. Spiry, M.D. (1967)
5. A. J. Tieszen, M.D. (1966)
6. V. V. Volin, M.D. (1966)
7. F. D. Gillis, M.D. (1966)
8. R. F. Thompson, M.D. (1966)
9. Dagfinn Lie, M.D. (1968)
10. Ted Hohm, M.D. (1968)
11. D. L. Ensberg, M.D. (1968)
12. Mary Sanders, M.D. (1968)

COMMISSION ON INTERNAL AFFAIRS—Covering Budget and Audit; Constitution and By-laws; Obituary Records; and Benevolent Fund.

1. D. L. Scheller, M.D., Chairman (1967)
2. Howard Saylor, Jr., M.D. (1967)
3. A. P. Reding, M.D. (1967)
4. C. Rodney Stoltz, M.D. (1967)
5. Jack Hagin, M.D. (1966)
6. Lyle Freimark, M.D. (1966)
7. C. E. Tesar, M.D. (1966)
8. Warren Peiper, M.D. (1966)
9. H. J. Stensrud, M.D. (1968)
10. Saul Friefeld, M.D. (1968)
11. C. L. Behrens, M.D. (1968)
12. Bill Hanson, M.D. (1968)

COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS — Covering Veterans Administration, Welfare Programs, Civil Defense, U. S. Public Health Service, and Legislation.

1. R. H. Quinn, M.D., Chairman (1967)
2. W. T. Sweeny, M.D. (1967)
3. Russell Orr, M.D. (1967)
4. James Reagan, M.D. (1967)
5. W. R. J. Kilpatrick, M.D. (1966)
6. R. W. Honke, M.D. (1966)
7. R. J. Foley, M.D. (1966)
8. R. J. Bareis, M.D. (1966)
9. C. F. Binder, M.D. (1968)
10. H. R. Wold, M.D. (1968)
11. G. R. Bartron, M.D. (1968)
12. Bill Church, M.D. (1968)

MEETING OF BUDGET AND AUDIT COMMITTEE

Saturday, May 15, 1965
Guest House Motel, Watertown

The meeting was called to order at 9:00 A.M. Present were Drs. A. P. Reding, D. L. Scheller, and A. K. Myrabo.

The Committee examined and discussed the CPA Audit of the Association's books. Dr. Scheller moved that the audit be accepted as presented. The motion was seconded by Dr. Myrabo and carried.

The Committee reviewed the proposed budget for 1965-66, and recommended that it be presented to the House of Delegates without change.

The meeting adjourned at 9:40 A.M.

BUDGET — INCOME

	PROPOSED BUDGET 1965-1966	BUDGETED 1964-1965	FUNDS SPENT 1964-1965 11 Months Operation
State Dues	$47,500.00	$43,000.00	$40,250.00
Annual Meeting	9,000.00	9,500.00	8,432.46
Interest	400.00	400.00	262.40
Miscellaneous		500.00	215.92
Salary Reimbursement		400.00	
Refunds & Misc.	1,000.00	500.00	948.13
Car Reimbursement	690.00	690.00	632.50
Kuehn Memorial Fund		500.00	
	$58,590.00	$55,490.00	$50,741.41
EXPENSES			
Salary, Ex. Sec.	$ 5,400.00	$ 4,800.00	$ 4,400.00
Salary, Other	11,500.00	11,560.00	10,551.71
Soc. Security	500.00	400.00	497.32
Legal & Audit	650.00	650.00	685.47
Tel. & Telegraph	1,500.00	1,500.00	1,388.59
Off. Supp. & Equip.	2,500.00	2,400.00	3,048.90
Dues & Subscrip.	1,500.00	1,500.00	1,242.00
Officers Travel	2,500.00	2,200.00	3,643.48
Physicians Travel	2,000.00		
Annual Meeting	7,500.00	8,000.00	8,783.09
Public Relation	4,000.00	4,000.00	3,457.83
Rent	3,000.00	2,400.00	2,200.00
Miscellaneous	100.00	400.00	50.00
Postage	1,800.00	1,500.00	2,196.70
Legis. Expense	1,500.00	2,400.00	1,312.40
Benevolent Fund	400.00	400.00	
Med. Sch. Endow.	200.00	200.00	
Ladies Auxiliary	800.00	1,000.00	590.73
Car Expense	1,800.00	1,800.00	1,978.13
Staff Travel	4,500.00	4,000.00	3,966.27
Clinical Path.	1,000.00	1,000.00	198.25
Insurance	200.00		129.92
Employ. Tax	25.00		195.90
Reserve	2,565.00	2,880.00	
Kathryn Kuehn Fund		500.00	500.00
Employee Relat.	1,150.00		
Medical Legal Refund			89.96
			182.00
	$58,590.00	$55,490.00	$51,288.65

JOURNAL — INCOME

	PROPOSED BUDGET 1965-1966	BUDGETED 1964-1965	FUNDS SPENT 1964-1965 11 Months Operation
Advertising	$18,000.00	$20,000.00	$16,333.09
Subscriptions	1,200.00	1,200.00	1,260.40
Miscellaneous	600.00	750.00	1,614.75
Refunds	200.00	100.00	2,794.10
	$20,000.00	$22,050.00	$22,002.34
EXPENSES			
Sal. Editors	$ 1,440.00	$ 1,440.00	$ 1,260.00
Sal. Staff		120.00	129.94
Legal & Audit	50.00	50.00	
Rent	300.00	900.00	
Tel. & Telegraph	175.00	175.00	180.50
Social Security		6.00	4.71
Travel Expense		350.00	
Office Supplies	16,620.00	17,000.00	18,249.48
Postage	200.00	200.00	234.30
Bal. to Surplus		809.00	
Balance due Midwest Beach 1964-65	1,215.00	1,000.00	1,000.00
	$20,000.00	$22,050.00	$21,058.93

AMERICAN MEDICAL ASSOCIATION DUES

INCOME	PROPOSED BUDGET 1965-1966	BUDGETED 1964-1965	FUNDS SPENT 1964-1965 11 Months Operation
Dues Payments from Doctors	$17,000.00	$17,000.00	$15,817.50
AMA DUES — EXPENSES			
Payments to AMA	$17,000.00	$17,000.00	$15,975.00

GROUP LIFE INSURANCE — INCOME

	PROPOSED BUDGET 1965-1966	BUDGETED 1964-1965	FUNDS SPENT 1964-1965 11 Months Operation
Premiums	$30,000.00	$30,000.00	$27,093.00
EXPENSES			
Pay. to Ins. Co.	$29,100.00	$29,100.00	$28,038.27
Postage	50.00	50.00	50.00
Legal & Audit	50.00	50.00	50.00
Supplies	50.00	50.00	3.40
Bal. to Surplus	750.00	750.00	
	$30,000.00	$30,000.00	$28,141.67

FIRST COUNCIL MEETING

May 15, 1965
Guest House Motel, Watertown, S. D.

The meeting was called to order at 10:00 A.M. by Dr. Harold Lowe, Chairman of the Council. Roll call was taken by Executive Secretary Richard C. Erickson. The following physicians were present: Drs. Paul Hohm, Preston Brogdon, R. R. Giebink, A. P. Reding, E. J. Perry, J. J. Stransky, M. C. Tank, L. C. Askwig, F. D. Leigh, E. T. Lietzke, J. T. Elston, E. P. Sweet, H. E. Lowe, and E. A. Johnson. Also present were the following Commission chairmen: Drs. R. H. Quinn, J. B. Gregg, C. L. Vogele, and D. L. Scheller.

Dr. Perry moved to dispense with the reading of the minutes of the previous meeting. The motion was seconded by Dr. Elston and carried.

The correspondence concerning the Letter of Agreement with the Veterans Administration was discussed by Mr. Erickson. No action was taken.

Mr. Erickson gave up-to-date information on the donations for a physician's house in South Dakota, Chile. Dr. Elston moved that inasmuch as we are close to the goal of $1500.00, the executive secretary be authorized to make up the difference and charge it to Public Relations. The check will be presented by Dr. Hohm while he is in Washington, to the Ambassador from Chile, and our two Senators will be requested to be present at the ceremony. Motion seconded by Dr. Leigh and carried.

Dr. Tank moved that Robert E. Van Demark, M.D. be reappointed as Editor of the Journal of Medicine. The motion was seconded by Dr. Perry and carried.

Guide lines for future Council meetings were discussed by Mr. Erickson. He suggested that Council meetings begin at 10:30 A.M.; personal appearances should be limited to 30 minutes; and all items on the agenda should be cleared through the Association office. Dr. Tank moved that the guide lines be accepted. The motion was seconded by Dr. Sweet and carried.

The Council considered the following letter received from Martens, Goldsmith, May & Porter, Pierre, South Dakota.

April 14, 1965

Mr. Richard C. Erickson, Executive Secretary
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, S. D.

Dear Dick:

This is to confirm our telephone conversation wherein we discussed a proposed billing arrangement to cover the period from April 30, 1965 to April 30, 1966.

On behalf of our office we would propose that an annual fee of $1,000.00 be paid us for our services, both as the counsel of your Association and for handling legislative matters at Pierre. We would make no charge over and above this for all services performed, including attendance at meetings where requested by you. Our only additional charge would be out-of-pocket traveling expense, phone calls, registration fees and items of this type.

As we mentioned we would more or less keep account of our time so that in the event the amount of our services were substantially increased at your request that we would be in a position to possibly negotiate a change in this fee arrangement in future years. However, the mere fact that our services in any one year were of an extent that would normally exceed $1,000.00 would not entitle us to request an additional amount for the prior year.

After you have discussed this with your principals we would appreciate hearing from you.

Very truly yours,
MARTENS, GOLDSMITH, MAY & PORTER
By Warren May

Dr. Leigh moved that a retainer fee of $1,000.00 be approved for Martens, Goldsmith, May & Porter. The motion was seconded by Dr. Sweet and carried.

Mr. Erickson discussed the proposed orientation program for new physicians in the State. Dr. Hohm moved that an orientation program for new doctors be instigated with the Fall Council Meeting and that attendance not be mandatory. The motion was seconded by Dr. Tank and carried.

A discussion was held on the request of MEDICO for a mailing list from the South Dakota State Medical Association and also the signature of one of the officers on a letter requesting funds. Dr. Giebink moved that the mailing list be furnished but that the officers not be authorized to sign the letter. The motion was seconded by Dr. Leigh and carried.

After consideration and discussion, Dr. Hohm moved that the executive office investigate more fully the leasing of a car for the Association and to go ahead with the necessary arrangements when the time is appropriate. The motion was seconded by Dr. Reding and carried.

Dr. Giebink moved that the Fall Council Meeting be held in conjunction with the Black Hills Seminar on August 6 and 7, with the schedule to be set up by the executive secretary. The motion was seconded by Dr. Elston and carried.

Dr. Gregg discussed "Operation Head Start." Dr. Stransky moved that the matter be referred to the appropriate Commission for further consideration and that if action is needed before the next Council meeting, a conference call should be set up. The motion was seconded by Dr. Leigh and carried.

Mr. Erickson discussed a resolution passed by the Pharmaceutical Association. The resolution states the following:

RESOLVED, that the South Dakota Pharmaceutical Association initiate a bill to be introduced to the legislature of the State of South Dakota which would, in effect, change the wording of S. D. Pharmacy Law 27:1013, Paragraph 2, to read as follows:

"Nothing in this chapter shall apply to or in any manner interfere with the practice of any physician as a physician or any licensed veterinarian as a licensed veterinarian or prevent him from supplying to his patients, **by his own hand, such drugs and medicines** as may seem to him proper, but no part of this section shall be so construed as to give any physician or licensed veterinary the right to furnish any intoxicating liquors to be used as a beverage on prescription or otherwise."

Dr. Tank moved that a meeting be set up with the Pharmaceutical Association to discuss this matter. The motion was seconded by Dr. Perry and carried. Dr. Hohm moved that the executive office contact the American Medical Association concerning the resolution for current information. The motion was seconded by Dr. Perry and carried.

Mr. Erickson discussed the resolution concerning Blue Shield as submitted by the Seventh District Medical Society.

RESOLUTION

In order to effect a resolution of the problem which is Blue Shield, it is herewith proposed that the Seventh District Medical Society of the State of South Dakota transmit to the appropriate State Medical Society Commission this request that they undertake a thorough evaluation of Blue Shield, taking into account the following:

1. The possibility that Blue Shield, through whatever means of dissolution is available according to law, be so dissolved, sold or transferred. Or
2. That Blue Shield be separated from the Medical Society. Though it may continue to function as the "doctors" insurance company, it be in no

way connected with the Medical Society. This separation may come in the form of changes in the Articles of Incorporation, cessation of the use of the House of Delegates as the corporate body of Blue Shield, prohibition of the occupation of executive level offices by one person in both organizations simultaneously, cessation of employment of common administrative personnel, cessation of landlord lessee relationship. Or

3. That Blue Shield be cut back by whatever means is legally available to re-establish its original purpose: to provide pre-paid medical care to the near indigent person. A corollary to this is to consider that Blue Shield cease active competition in the insurance field for high level policies or for service agreements with large corporations or Federal agencies. Or
4. That, instead of the foregoing, Blue Shield be completely accepted as a part of the State Medical Society; that it be recognized as an insurance company and that it be recognized to be in direct competition in the insurance field and that all member physicians of the State Medical Society be encouraged to participate in and stimulate the growth of Blue Shield in South Dakota.

Dr. Hohm moved that the resolution be referred to the appropriate Commission for study and recommendation. The motion was seconded by Dr. Perry and carried.

Dr. Tank discussed a publication on herbicides which is available from State College. Dr. Leigh moved that this matter be referred to the Commission on Scientific Medicine for study and recommendation. The motion was seconded by Dr. Sweet and carried.

Dr. Reding gave the report of the Budget and Audit Committee and moved that the report be accepted. The motion was seconded by Dr. Tank and carried.

Dr. Quinn spoke on the national legislative picture.

Dr. Gregg spoke on a request for endorsement of the Medical Association for legislation which would require immunizations for pre-school children. Dr. Perry moved that the request be referred to the Commission on Medical Service for study and recommendation. The motion was seconded by Dr. Stransky and carried.

The meeting adjourned on motion at 1:15 P.M.

SECOND COUNCIL MEETING
May 17, 1965
Plateau Restaurant, Watertown, S. D.

The meeting was called to order at 10:45 P.M. by Dr. Harold Lowe, Chairman of the Council. The following physicians were present for roll call: Drs. Paul Hohm, Preston Brogdon, J. J. Stransky, A. P. Reding, James P. Steele, G. R. Bartron, M. C. Tank, A. J. Tieszen, Fred Leigh, E. T. Lietzke, Clark Johnson, J. T. Elston, H. E. Lowe, and E. A. Johnson.

Dr. Lietzke moved to dispense with the reading of the minutes of the last meeting. The motion was seconded by Dr. Tank and carried.

The Council reconsidered action taken at the first Council meeting concerning the date of the next Council meeting. Dr. Leigh moved that the date be changed to September 26, in Huron, S. D. The motion was seconded by Dr. Steele and carried.

Dr. Steele discussed "Operation Head Start." Dr. Steele moved that an officer of the Association and Mr. Erickson meet with Mrs. George Buntley of Brookings, and draw up a plan for the participation of the State Medical Association in this program; and that the physicians appointed by the President to serve on this project be authorized to negotiate an agreement for the doctors in the State. The motion was seconded by Dr. Lietzke and carried.

Dr. Steele also suggested that a liaison committee be set up to work with the Welfare Department, Medical School, Public Health Department, and State Department of Health, which would meet three or four times a year to keep the lines of communication open between these agencies and our Association. It was suggested that this liaison committee could be incorporated into our Commission structure and that Dr. G. E. Tracy has been working with the State Health Department closely in the past few months.

Mr. Erickson then introduced the new members of the Council: Dr. G. Robert Bartron from the Watertown District Medical Society; Dr. A. J. Tieszen from the Pierre District Medical Society; and Dr. Clark Johnson from the Yankton District Medical Society. Dr. Harvard Lewis from the Mitchell District Medical Society was not present at the meeting.

Dr. Tank nominated Dr. J. T. Elston of Rapid City, as Chairman of the Council. Dr. Hohm moved that nominations cease and that a unanimous ballot be cast for Dr. Elston. The motion was seconded by Dr. Lietzke and carried.

The meeting adjourned on motion at 11:15 P.M.

FIRST HOUSE OF DELEGATES MEETING
May 15, 1965
Guest House Motel, Watertown, South Dakota

The meeting was called to order at 1:30 P.M. by R. R. Giebink, M.D., Speaker of the House.

Roll call was taken by Executive Secretary Richard C. Erickson. Present were Drs. J. P. Steele, Paul Hohm, P. P. Brogdon, A. P. Reding, R. R. Giebink, R. H. Quinn, E. J. Perry, J. J. Stransky, M. C. Tank, L. C. Askwig, Fred Leigh, E. T. Lietzke, T. H. Sattler, J. T. Elston, E. P. Sweet, H. E. Lowe, E. A. Johnson, G. J. Bloemendaal, R. A. Standard, Paul Bunker, G. E. Tracy, Parry Nelson, D. L. Scheller, J. A. Anderson, H. E. Werthmann, C. L. Swanson, Ted Hohm, William Hanson, H. R. Lewis, J. O. Mabee, Bill G. Church, J. B. Gregg, S. M. Brzica, D. L. Ensberg, A. K. Myrabo, E. W. Sanderson, R. C. Knowles, G. W. Knabe, R. J. Foley, E. T. Ruud, F. J. Gilbert, R. J. Lynn, P. Lakstigala, P. Dzintars, C. A. Johnson, and Dagfinn Lie.

Dr. Myrabo moved that the reading of the minutes of the previous meeting be dispensed with inasmuch as they have been published in the South Dakota Journal of Medicine. The motion was seconded by Dr. Perry and carried.

Dr. Knabe moved that the reading of the Reports of Officers, Councilors, and Executive Secretary, be dispensed with inasmuch as they are published in the Delegates Handbook. The motion was seconded by Dr. Ruud and carried.

Dr. Giebink appointed the members of the various reference committees as follows:

1. **Reference Committee on Credentials:**
   Paul Bunker, M.D., Chairman
   P. Dzintars, M.D.
   S. M. Brzica, M.D.
2. **Reference Committee on Reports of Officers and Councilors:**
   Bill G. Church, M.D., Chairman
   E. W. Sanderson, M.D.
   P. Lakstigala, M.D.
3. **Reference Committee on Resolutions and Memorials:**
   William Hanson, M.D., Chairman
   R. J. Lynn, M.D.
   C. L. Swanson, M.D.
4. **Reference Committee on Reports of Commissions on Medical Service, Communications, and Allied Organizations:**
   Parry S. Nelson, M.D., Chairman
   J. B. Gregg, M.D.
   Harvard Lewis, M.D.
5. **Reference Committee on Reports of Commissions on Scientific Medicine, Internal Affairs, Legislation and Governmental Relations:**
   D. L. Scheller, M.D., Chairman
   George Knabe, M.D.
   F. J. Gilbert, M.D.
6. **Reference Committee on Reports of Special Committees and Miscellaneous Business:**
   D. L. Ensberg, M.D., Chairman
   J. T. Elston, M.D.
   E. J. Perry, M.D.

The following physicians were appointed to the Nominating Committee by the President:

District 1 G. J. Bloemendaal, M.D.
District 2 G. E. Tracy, M.D.

District 3 J. A. Anderson, M.D.
District 4 H. E. Werthmann, M.D.
District 5 Ted Hohm, M.D.
District 6 Judson O. Mabee, M.D., Chairman
District 7 A. K. Myrabo, M.D.
District 8 R. J. Foley, M.D.
District 9 E. T. Ruud, M.D.
District 10 E. P. Sweet, M.D.
District 11 C. A. Johnson, M.D.
District 12 E. A. Johnson, M.D.

Dr. Giebink read the following resolutions:

RESOLUTION #1, submitted by the 7th District Medical Society

WHEREAS: The legislature recently voted to expand the medical aid to the aged program known as M.A.A., there will be increasing utilization of the program by the near indigent population of the state, and

WHEREAS: Certain inequities and shortcomings are known to exist in the present program, primarily due to omission from the schedule; therefore,

BE IT RESOLVED: That the South Dakota State Medical Association recommend to the State Welfare Commission that the payment schedule be changed to conform to the current South Dakota Relative Value Fee Schedule as adopted by the 1965 House of Delegates, using a conversion ratio of $3.50 per unit.

RESOLUTION #2, submitted by the 7th District Medical Society

WHEREAS: The present law states that vouchers for services under the O.A.A. Program must be submitted within 60 days after the month in which the services are rendered; many patients are reluctant, or neglect, to declare that they are receiving benefits under the program, and frequently fees for services are denied the physician or surgeon; therefore,

BE IT RESOLVED: That the South Dakota State Medical Association negotiate with the State Welfare Commission for a six month time limit for filing claims and/or 60 days after receiving notification from the individual that they are under the O.A.A. Program. An alternative would then be to compel the County Welfare Board of the County to assume responsibility for the claim.

Dr. Gregg moved that an amendment be made in the resolution changing the words "6 month time limit" to "an increase in time." The Amendment was seconded by Dr. Sanderson and carried.

RESOLUTION #3, submitted by the 7th District Medical Society

WHEREAS: The responsibilities of District Councilor are of great magnitude, and time consuming, and

WHEREAS: The office of District Councilor is similar in American governmental constitution to the office of Senator, and

WHEREAS: The office of Delegate to the House is similar to United States Representative; therefore,

BE IT RESOLVED: That District Councilors may not act as voting members of the House of Delegates unless specifically elected separately to this post by their respective District, and further be it

RESOLVED: That the steps necessary to implement this resolution be undertaken as soon as possible by amendment to the Constitution and Bylaws of the South Dakota State Medical Association.

Dr. Gregg moved that the resolution be amended to read "That District Councilors, Officers, and Delegates to the AMA" may not, etc., instead of "The District Councilors" may not, etc. The motion was seconded by Dr. Myrabo and carried.

RESOLUTION #4, submitted by the 9th District Medical Society

WHEREAS: The South Dakota State Medical Association has grown to a membership in excess of 400, and operates on an annual budget in excess of $55,000, and

WHEREAS: It is unreasonable to expect that the House of Delegates, meeting for a short two sessions annually, can conduct the affairs of the Association in an informed and intelligent manner, and

WHEREAS: The Council, meeting at least four times annually, is the de facto legislative body of the Association, and

WHEREAS: In accordance with Article VI and Chapter V, Section III of the Constitution and Bylaws of the South Dakota State Medical Association the Council is given authority to assume all of the responsibilities of the House of Delegates between annual sessions, and

WHEREAS: Experience has shown that alternate delegates and substitute delegates frequently are selected at the last minute, and cannot be expected to approach the annual session, with an adequate degree of preparation and knowledge, and

WHEREAS: The Councilors are elected for a three year period, and in practice are frequently re-elected for a similar term, establishing a continuity of membership and experience which is lacking in the House of Delegates, and

WHEREAS: The House of Delegates almost always approves the recommendations of the Council without change, recognizing the more comprehensive knowledge and experience of the Council in the affairs of the South Dakota State Medical Association.

THEREFORE BE IT RESOLVED: that the Constitution and Bylaws of the South Dakota State Medical Association be amended so as to abolish the House of Delegates, and to transfer the responsibilities of the House of Delegates to an enlarged and expanded Council, and

BE IT FURTHER RESOLVED: Following passage of the above Resolution, that each district shall be entitled to one Councilor for each 50 members or fraction thereof, and

BE IT FINALLY RESOLVED: That the Council become the corporate body of the South Dakota Medical Service, Incorporated.

RESOLUTION #5, submitted by the Council of the South Dakota State Medical Association

WHEREAS: In the event of the passage of medical voluntary supplemental health care legislation for those over 65, the participation of Blue Shield in this activity must be within the established principles and capacities of Blue Shield so to serve.

THEREFORE BE IT RESOLVED: That the House of Delegates of the South Dakota State Medical Association, and the Corporate Body of South Dakota Medical Services, Inc., hereby authorizes the Board of Directors of South Dakota Blue Shield to offer the services of Blue Shield in the public interest, in a manner that will maintain good quality of medical care, freedom of choice of physician, and no interference in the patient-physician relationship.

RESOLUTION #6, submitted by the 7th District Medical Society

WHEREAS: The Mental Health Laws of the State of South Dakota as included in Title #30 have been supplemented by additions and subtractions but have not been recodified since 1939; and

WHEREAS: These laws governing the care and handling of the mentally ill of South Dakota are in need of revision and recodification; and

WHEREAS: These laws deal with both medical and legal aspects of the care and handling of the mentally ill of South Dakota,

BE IT THEREFORE RESOLVED that this Seventh District Medical Society of the State of South Dakota request the South Dakota Medical Society, when next it meets in conference in Watertown, that it propose appropriate study of the mental health laws of the State of South Dakota, and

BE IT RESOLVED that the Medical Society of the State of South Dakota invite cooperative endeavor of the South Dakota State Bar Association in the study of the mental health laws of the State of South Dakota, and

BE IT RESOLVED that a committee of physicians from the South Dakota Medical Society be appointed by the President to make the aforementioned study, in concert with a committee from the South Dakota Bar Association, with the purpose that recommendations be shared with the Legislative Research Council of the State of South Dakota and proposed for legislative action at an approaching Legislative Session, but no later than the Session of January, 1967, and

BE IT FURTHER RESOLVED that a budget of one hundred dollars be allocated by the State Medical Society for the use of the aforementioned committee that it may accomplish the task put before it; these monies to be vouchered by the physician co-chairman of the committee through the State Medical Association office.

RESOLUTION #7, submitted by the 9th District Medical Society

WHEREAS: The business of the South Dakota Medical Association requires the members of the Council to attend several meetings each year, and

WHEREAS: The term of office is longer for Councilor than is usual for other officers of the Association, and

WHEREAS: A Councilor is thereby caused inordinate expense and inconvenience by his service, and

WHEREAS: Inequity is compounded for those traveling a greater distance, and those beginning practice, now therefore

BE IT RESOLVED that the House of Delegates of the South Dakota Medical Association authorize, and it does hereby authorize, to be placed in the Budget for the year of 1966, and for each year thereafter, a fund to provide:

(a) mileage at the rate of ten cents ($.10) per mile actually traveled by Councilors for travel to required meetings, when such meetings are held fifty (50), or more miles from the residence of the Councilor, and

(b) per diem at the rate of twenty dollars ($20.00) for Councilors in attendance at meetings held at a place fifty (50) or more miles from the residence of the Councilor.

RESOLUTION #8, submitted by Bill G. Church, M.D. of the 7th District Medical Society

WHEREAS, the present Medicare proposal of government sponsored medical care for the aged is a socialistic scheme, and

WHEREAS, Such a socialized program would destroy the patient-physician relationship and regiment physicians and their patients, thereby leading to inferior medical care as it has in other countries, and

WHEREAS, voluntary non-participation is the only method left to physicians to protect their patients from the deterioration of medical care by such socialistic schemes, therefore be it

RESOLVED that the House of Delegates of the South Dakota State Medical Association in regular session assembled in Watertown, South Dakota, this 16th day of May, 1965, urge its members to refuse to participate in the socialistic scheme known as the Mills Bill; and be it further

RESOLVED That the American Medical Association be requested to endorse again the principle of non-participation.

Dr. Giebink referred all of the resolutions presented to the Reference Committee on Special Committees and Miscellaneous Business.

Dr. Myrabo moved that Dr. Lyle Hare, Spearfish, and Dr. C. E. Sherwood, Madison, be named Honorary Life Members in the State Medical Association. The motion was seconded by Dr. Tank and carried.

Dr. J. P. Steele introduced Dr. James Goddard who gave a short discussion on the proposed computer system.

Dr. Gregg moved that the House of Delegates approve the calling of special district society meetings at which time Dr. Goddard will discuss the computer system. The motion was seconded by Dr. C. A. Johnson and carried.

The meeting adjourned on motion at 4:00 P.M.

SECOND HOUSE OF DELEGATES MEETING

May 16, 1965 Guest House Motel, Watertown, S. D.

The second House of Delegates meeting was called to order at 1:30 P.M. by Speaker of the House, R. R. Giebink, M.D. The following members were present for roll call: Drs. J. P. Steele, Paul Hohm, Preston Brogdon, A. P. Reding, R. R. Giebink, R. H. Quinn, E. J. Perry, J. J. Stransky, M. C. Tank, L. C. Askwig, Fred Leigh, E. T. Lietzke, T. H. Sattler, J. T. Elston, E. P. Sweet, H. E. Lowe, E. A. Johnson, G. J. Bloemendaal, Paul Bunker, G. E. Tracy, P. S. Nelson, D. L. Scheller, J. A. Anderson, R. C. Jahraus, H. E. Werthmann, Ted Hohm, William Hanson, Harvard Lewis, J. O. Mabee, Bill G. Church, J. B. Gregg, S. M. Brzica, D. L. Ensberg, A. K. Myrabo, E. W. Sanderson, R. C. Knowles, George Knabe, R. J. Foley, E. T. Ruud, F. J. Gilbert, P. Dzintars, M. R. Cosand, C. A. Johnson, and Dagfinn Lie.

Dr. J. O. Mabee, Chairman of the Nominating Committee, read the following report:

The Nominating Committee met at 4:00 P.M. Saturday, May 15th. The following members were present for roll call: Drs. Bloemendaal, Tracy, Anderson, Werthmann, Hohm, Myrabo, Ruud, Sweet, C. A. Johnson, and J. O. Mabee.

The following recommendations are made for Councilor for 3 year terms:

1st District—E. J. Perry, M.D.
2nd District—G. Robert Bartron, M.D.
4th District—A. J. Tieszen, M.D.
8th District—Clark F. Johnson, M.D.

The following recommendation is made for Councilor for a 1 year term:

6th District—Harvard Lewis, M.D.

The following recommendations are made for officers of the Association:

President—Paul Hohm, M.D.
President Elect—Preston Brogdon, M.D.
Vice President—John J. Stransky, M.D.
Speaker of the House—R. H. Hayes, M.D.

The Nominating Committee selects Aberdeen, S. D., as the meeting place for the 1968 annual meeting.

The Committee recommends the adoption of this report.

Dr. Gregg moved that nominations cease and that a unanimous ballot be cast for the slate of officers presented by the Nominating Committee. The motion was seconded by Dr. Perry and carried.

Dr. Knabe moved that the report be accepted as a whole. The motion was seconded by Dr. Knowles and carried.

Dr. Leigh moved that the reading of the minutes of the previous meeting be dispensed with inasmuch as they will be published. The motion was seconded by Dr. Hanson and carried.

Dr. Paul Bunker, Chairman of the Reference Committee on Credentials, read the following report:

Report of the Reference Committee on Credentials

The credentials of the Delegates to the South Dakota State Medical Association were checked and the following delegates, alternate delegates, officers, and councilors were present: Drs. James P. Steele, Paul Hohm, Preston Brogdon, A. P. Reding, R. R. Giebink, R. H. Quinn, E. J. Perry, J. J. Stransky, M. C. Tank, L. C. Askwig, Fred Leigh, E. T. Lietzke, T. H. Sattler, J. T. Elston, E. P. Sweet, H. E. Lowe, E. A. Johnson, G. J. Bloemendaal, Roger Standard, Paul Bunker, G. E. Tracy, P. S. Nelson, D. L. Scheller, J. A. Anderson, H. E. Werthmann, C. L. Swanson, Ted Hohm, William Hanson, G. M. Huet, Harvard Lewis, J. O. Mabee, C. F. Binder, B. G. Church, J. B. Gregg, S. M. Brzica, D. L. Ensberg, A. K. Myrabo, E. W. Sanderson, R. C. Knowles, G. M. Knabe, R. J. Foley, L. G. Behan, Hugo Andre, E. T. Ruud, F. J. Gilbert, R. J. Lynn, P. Dzintars, P. Lakstigala, C. A. Johnson, Dagfinn Lie.

A quorum was present for the meeting of the House of Delegates and the Credentials of those in attendance were in order

Total registration for the convention was 388; including 189 physicians, 64 guests, 52 exhibitors, and 83 Auxiliary members.

Respectfully submitted,
REFERENCE COMMITTEE ON CREDENTIALS
Paul G. Bunker, M.D., Chairman

Dr. Perry moved that the report be accepted. The motion was seconded by Dr. Bloemendaal and carried.

Dr. Bill Church read the Report of the Reference Committee on Reports of Officers and Councilors.

Report of the Reference Committee on Reports of Officers and Councilors

The report of the President was considered and the Committee wishes to commend him for his diligent work in the cause of the free practice of medicine in South Dakota. It was the feeling of the Committee that he be commended for visiting every District in the State, as well as attending numerous national functions.

The reports of the President-Elect, Vice-President, Secretary-Treasurer, Speaker of the House, Councilor at Large, AMA Delegates, Chairman of the Executive Committee, and Executive Secretary were read. The Reference Committee recommends they be accepted by the House of Delegates.

The Committee also recommends acceptance of the reports of ten district councilors. The 6th District and 11th District did not report and the Committee recommends that reports from them be submitted.

Respectfully submitted,
REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND COUNCILORS
Bill G. Church, M.D., Chairman

Dr. Sanderson moved that the report be accepted. The motion was seconded by Dr. Myrabo and carried.

Dr. William Hanson read the Report of the Reference Committee on Resolutions and Memorials.

Report of Reference Committee on Resolutions and Memorials

WHEREAS, the Watertown District Medical Society and the Ladies Auxiliary members have been so thorough in making arrangements for the success of the combined meeting of our 84th Anniversary,

BE IT RESOLVED, that the South Dakota State Medical Association give its voice in appreciation and thanks to the local physicians in Watertown and their wives.

WHEREAS, the management of the Guest House Motel has been so cooperative in providing facilities for the success of the 84th Anniversary meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Guest House Motel.

WHEREAS, the Chamber of Commerce has provided excellent service in making it possible for the success of the working arrangements,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Watertown Chamber of Commerce.

WHEREAS, the Watertown Public Opinion and Radio Station KWAT have been most cooperative in presenting the public news of the 84th Annual Meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Watertown Public Opinion and Radio Station KWAT.

WHEREAS, the Watertown Country Club has provided facilities for the Stag Party and contributed much to the success of the annual meeting and entertainment,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Watertown Country Club.

WHEREAS, the Plateau Inn has provided facilities for our banquet and other meetings, and has contributed much to the success of our meeting,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Plateau Inn.

WHEREAS, the Drake Motor Inn has provided facilities for meetings and has contributed greatly to the success of our meeting,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Drake Motor Inn.

BE IT ALSO RESOLVED that the South Dakota State Medical Association contribute $50.00 to the South Dakota Medical School Endowment Fund in memory of each of the following physicians who passed away during the last year:

F. E. Boyd, M.D., Flandreau
P. D. Peabody, M.D., Sisseton
C. J. Pinard, M.D., Gary
R. T. Maxwell, M.D., Clear Lake

Respectfully submitted,
Reference Committee on Resolutions and Memorials
William Hanson, M.D., Chairman

Dr. Tracy moved that the report be accepted. The motion was seconded by Dr. Knowles and carried.

Dr. Parry Nelson read the report of the Reference Committee on Reports of Commissions on Medical Service, Communications, and Liaison with Allied Organizations.

Report of the Reference Committee on Reports of Commissions on Medical Service, Communications, and Liaison with Allied Organizations

COMMISSION ON MEDICAL SERVICE

1. Board of Directors of the South Dakota Medical School Endowment Fund. The Reference Committee recommends acceptance of this report.
2. Medical School Affairs Sub-Committee. The Reference Committee recommends acceptance of this report.
3. Rural Health Sub-Committee. The Reference Committee recommends acceptance of this report.
4. Traffic Safety Sub-Committee. The Reference Committee recommends acceptance of this report.
5. School Health Sub-Committee. The Reference Committee recommends acceptance of this report with the following changes: Under Recommendations, Part (b) add the following "as spelled out under section (e) of the above committee report."
6. Committee on Hospital Utilization and Insurance Advisory Board. The Reference Committee recommends acceptance of this report with the following changes: Part (a) to read: Each hospital in the State should be encouraged to establish a Utilization Committee for review of patient admissions and costs and ancilliary facilities at regular intervals, to direct attention to over utilization of hospital beds. Under Part (b) to read as follows: An Insurance Advisory Committee and Utilization Committee should be, etc.

COMMISSION ON LIAISON WITH ALLIED ORGANIZATIONS

The Reference Committee recommends the acceptance of this report.

COMMISSION ON COMMUNICATIONS

The Reference Committee recommends the acceptance of this report with the hearty recommendation to establish a Speakers Bureau.

Respectfully submitted,
Reference Committee on Reports of Commissions on Medical Service, Communications, and Liaison with Allied Organizations
Parry Nelson, M.D., Chairman

Dr. Jahraus moved that the report of the Reference Committee be accepted. The motion was seconded by Dr. Bunker and carried.

Dr. Scheller read the report of the Reference Committee on Reports of Commissions on Scientific Medicine, Legislation and Governmental Relations, and Internal Affairs.

Report of the Reference Committee on Reports of Commissions on Scientific Medicine, Legislation and Governmental Relations, and Internal Affairs

The Committee reviewed the report of the Commission on Scientific Medicine and recommends that the report be accepted along with the recommendations as set forth in the report. However, in regard to the implementation of the State's TB Program, the Committee recommends that the section establishing the basic staff of the proposed initial treatment cen-

ters be amended to read as follows: Board eligible or Board certified in general surgery, including some experience in thoracic surgery, or one who is qualified in the opinion of the Commission.

The Committee further recommends that the State Medical Association along with the Commission on Scientific Medicine, cooperate with the State Health Department in implementing South Dakota's Tuberculosis Control and Treatment program.

The Committee considered the report of the Commission on Internal Affairs and recommends the adoption of the report.

The Committee considered the report of the Commission on Legislation and Governmental Relations. The Committee recommends the adoption of the report. In addition, the Committee recommends that an attempt be made to set up a state-wide dollar coefficient utilizing the Relative Value Study for payment of services rendered to county patients such as that used under the present MAA Program.

The Committee recommends that the current AMA booklet dealing with disaster care be used as a guide line for local medical community disaster care planning, and recommends an up-dating of present plans.

Respectfully submitted,
Reference Committee on Reports of Commissions on Scientific Medicine, Internal Affairs, and Legislation and Governmental Relations
D. L. Scheller, M.D., Chairman

Dr. Bunker moved acceptance of the report. The motion was seconded by Dr. Bloemendaal and carried.

Dr. C. A. Johnson gave a verbal report on the animal tissue study which has been developed during the past year. Dr. Scheller moved that the House of Delegates commend Dr. Johnson for his report and give him support in this project. The motion was seconded by Dr. Nelson and carried. Dr. Johnson was directed to act as Chairman of a Committee to develop this program further and to select his own committee.

Dr. Ensberg read the report of the Reference Committee on Special Committees and Miscellaneous Business.

Report of the Reference Committee on Reports of Special Committees and Miscellaneous Business

1. The Reference Committee considered the report of the Grievance Committee and recommends the adoption of this report.

Dr. Sanderson moved the acceptance of this portion of the report. The motion was seconded by Dr. Stransky and carried.

2. The Reference Committee considered the report of the Fee Advisory Committee and recommends the acceptance of this report with the stipulation that the schedule of the College of American Pathologists as revised by the South Dakota Fee Advisory Committee be incorporated in the Pathology Section; that the schedule of the American Society of Internal Medicine, as revised by the South Dakota Fee Advisory Committee be used as the Medical Section; and that the coding and mechanics of effecting these changes be left to the Fee Advisory Committee to work out.

Dr. Perry moved acceptance of this section of the report. The motion was seconded by Dr. Tracy and carried.

3. The Reference Committee considered Resolution ♯1, submitted by the Seventh District Medical Society, concerning the M.A.A. program, and recommends the adoption of this resolution. (See minutes of First House of Delegates meeting.)

Dr. Leigh moved the acceptance of this portion of the report. The motion was seconded by Dr. Foley. Dr. Sanderson moved that the resolution be amended to add the words "without exclusion." The amendment was seconded by Dr. Knowles. The amendment was carried. The original motion as amended was carried.

4. The Reference Committee considered Resolution ♯2, submitted by the Seventh District Medical Society, concerning the OAA program and as amended on the floor of the House of Delegates. The Committee recommends the adoption of this resolution as amended. (See minutes of First House of Delegates meeting.)

Dr. Knowles moved the adoption of this portion of the report. The motion was seconded by Dr. Leigh and carried.

5. The Reference Committee considered Resolution ♯3, submitted by the Seventh District Medical Society, concerning the voting rights of Councilors, and officers as amended on the floor of the House, in the House of Delegates. The Reference Committee recommends that this resolution be referred to the Commission on Internal Affairs for study and recommendation. (See minutes of First House of Delegates meeting)

Dr. Stransky moved the adoption of this portion of the report. The motion was seconded by Dr. Nelson and carried.

6. The Reference Committee considered Resolution ♯4, submitted by the Ninth District Medical Society concerning the abolition of the House of Delegates. The Committee recommends that this resolution also be referred to the Commission on Internal Affairs with the stipulation that the Commission report back at the next House of Delegates with definite recommendations on the solution of the questions raised by these two resolutions. (See minutes of First House of Delegates meeting)

Dr. Perry moved the adoption of this portion of the report. The motion was seconded by Dr. Stransky and carried.

7. The Reference Committee considered Resolution ♯5, submitted by the Council of the State Medical Association, concerning the role of Blue Shield in any supplemental health care legislation and recommends the adoption of this resolution. (See minutes of First House of Delegates meeting)

Dr. Leigh moved the adoption of this portion of the report. The motion was seconded by Dr. Hanson and carried.

8. The Reference Committee considered Resolution ♯6, submitted by the Seventh District Medical Society, concerning a study of the mental health laws of South Dakota. The Committee recommends the adoption of this resolution. (See minutes of First House of Delegates meeting)

Dr. Perry moved the adoption of this portion of the report. The motion was seconded by Dr. Bloemendaal and carried.

9. The Reference Committee considered Resolution ♯7, submitted by the Ninth District Medical Society concerning a per diem and mileage allowance for Councilors. The Committee recommends rejection of this resolution. (See minutes of First House of Delegates meeting.)

Dr. Tracy moved the adoption of this portion of the report. The motion was seconded by Dr. Bloemendaal and carried.

10. The Reference Committee considered Resolution ♯8, submitted by Dr. Bill Church concerning the non-participation of physicians in the program proposed in the Mills Bill, ♯6675. The Reference Committee recommends that the following resolution be adopted by the House of Delegates as a substitute recommendation:

WHEREAS: the private system of medical care in the United States has resulted in the highest quality of medical care available anywhere, and

WHEREAS: the Mills Bill, HR 6675, proposes a program of socialized medical care for the aged, but leaves the physician free to participate or not, as he sees fit, and

WHEREAS: socialization of medical care has historically led to deterioration of the quality of that care, and

WHEREAS: it is the moral and ethical responsibility of physicians to protect the interest of those they serve, now be it therefore

RESOLVED by the House of Delegates of the South Dakota State Medical Association in regular session assembled this 16th day of May, 1965, that the physicians of this Association be encouraged to continue to care for their patients free from

control by any agency or third party designated to implement any compulsory social insurance program of medical care; and be it further

RESOLVED that this resolution be forwarded to the House of Delegates of the American Medical Association.

Dr. Tracy moved that this portion of the report be tabled. The motion was seconded by Dr. Sattler and carried.

Dr. Giebink introduced the new Councilors and Officers of the State Association. He then administered the Oath of Office to incoming president Paul Hohm, M.D.

The meeting was adjourned on motion at 2:45 P.M.

A presentation by Dr. Donovan Ward, president of the American Medical Association followed the meeting.

PRESIDENTIAL OATH OF OFFICE

I solemnly swear that I shall carry out the duties of the President of the South Dakota State Medical Association to the best of my ability. I shall strive constantly to maintain the ethics of the medical profession and to promote the public health and welfare. I shall dedicate myself and my office to improving health standards and to the task of bringing increasingly improved medical care to the people of South Dakota. I shall uphold the Constitution and Bylaws of the AMA and the South Dakota State Medical Association. I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans.

I do solemnly swear that I will discharge the duties of this office to the best of my ability, so help me God.

MINUTES OF THE MEDICAL SCHOOL ENDOWMENT ASSOCIATION

8:00 A.M., Sunday, May 16, 1965
Guest House Motel
Watertown, S. D.

The meeting was called to order by Dr. F. R. Williams, chairman of the Board of Directors. Present for roll call were Drs. F. R. Williams, E. T. Lietzke, T. H. Willcockson, J. A. Anderson, R. C. Jahraus, Warren Jones, J. B. Gregg, and G. E. Tracy.

Dr. Willcockson moved that the minutes of the previous meeting be dispensed with inasmuch as they have been mailed to each member of the Board. The motion was seconded by Dr. Jones and carried.

Mr. Erickson reported on the donations received for the Endowment Association for 1965.

A discussion was held on whether or not the Endowment Association could accept a note from a physician who had made a personal loan to a medical student and wished to turn it over to the Endowment Association. Dr. Jahraus moved that the Endowment Association accept the note in the same manner as we carry other notes from medical students. The motion was seconded by Dr. Lietzke and carried. It was suggested that publicity be given this matter to the physicians in the State as soon as various tax aspects have been clarified.

Mr. John Zimmer reported on the Stansbury property in Vermillion and explained the expenses of maintaining the property. Dr. Willcockson moved that the Endowment Association accept the offer of Mrs. Stansbury and acquire the property. The motion was seconded by Dr. Jones and carried. Mr. Zimmer was instructed to effect the transfer of the property.

The loan information sheet prepared by the executive office was discussed. Dr. Jahraus moved that it be accepted. The motion was seconded by Dr. Lietzke and carried. This sheet will be re-produced and copies provided the University of South Dakota Medical School. It was decided to send a copy of the information sheet to each physician in the State with a covering letter explaining that these are guide lines established for the operation of the student loan program.

Mr. Zimmer suggested that a list on physicians who have donated to the Endowment Association this year be published in the October Journal of Medicine. This suggestion was accepted unanimously.

Dr. Tracy discussed the plans for the booth in the exhibit hall and arranged a schedule for manning the booth during the annual meeting.

Mr. Zimmer discussed the revision of the articles and bylaws. It was decided that he will meet with Dr. Williams in June and start work on the revision; that proposals will be mailed to all other members of the Board.

The meeting adjourned at 9:15 A.M.

REPORT OF THE PRESIDENT

I would like to express my most sincere gratitude to all the officers, members and employees of the South Dakota State Medical Association for the splendid enthusiasm and spirit of cooperation which has been shown to me during my tenure of office. I am sure there has never been a president of an organization who has received more support from all segments. This is particularly appreciated when one realizes that our State Medical Association has gone through an organizational change and my year of tenure has been one in which medicine has faced the most determined assault against its traditions and customs within recent memory.

I most earnestly beg of you to continue this spirit of togetherness and cooperation in the future and to realize that with tolerance, understanding and much hard work, we can do a great many things that others might think impossible. The time has passed when the members of an organization such as ours, can sit back and let a few of its officers do its thinking and its work. I earnestly call on all of you in the future to devote your time, efforts and intellectual capabilities to plan ahead for what may be facing medicine in the future. For too long, we have reacted instead of acted and thus been at the mercy of those who are thinking years ahead of us. We can no longer afford this luxury. If we believe in our future and our heritage, we must spend more and more time working to preserve it in spite of an ever increasing patient load.

I would like to take the privilege of having the rest of my report consist of a list of the activities of the President's office during the past as did my predecessor Doctor Robert Hayes.

June 22-24, 1964—
AMA annual meeting, San Francisco, California
July 11, 1964—
Executive Committee Meeting, Sioux Falls, South Dakota
July 21, 1964—
Board of Medical Examiners, Rapid City, South Dakota
August 6, 1964—
District Meeting, Mitchell, South Dakota
August 20, 1964—
Black Hills District Fish Fry, Spearfish Park
September 1, 1964—
Watertown District Meeting, Watertown, South Dakota
September 3, 1964—
Medical School visitation, Vermillion, South Dakota
September 26, 1964—
Medical Legal Conference, Pierre, South Dakota
September 27, 1964—
Council Meeting, Pierre, South Dakota
October 3, 1964—
Las Vegas, Nevada, Prepay conference (medical)
October 8, 1964—
District Meeting, Brookings, South Dakota
October 13, 1964—
District meeting, Mobridge, South Dakota
November 4, 1964—
District meeting, Aberdeen, South Dakota
November 7-8, 1964—
AMA Disaster care conference, Chicago, Illinois
November 19, 1964—
District meeting, Huron, South Dakota
November 30, 1964—
AMA Clinical session, Miami, Florida

December 3, 1964—
District meeting, Yankton, South Dakota
December 8, 1964—
VA hospital visitation, Sioux Falls, South Dakota
January 5, 1965—
District meeting, Sioux Falls, South Dakota
January 7, 1965—
District meeting, Winner, South Dakota
January 10, 1965—
Council meeting, Sioux Falls, South Dakota
January 21, 1965—
State League for nursing, Yankton, South Dakota
January 26, 1965—
Medical School accreditation inspection meeting
March 10, 1965—
Whetstone District meeting, Rosholt, S.D.
March 13, 1965—
Regional Conference SAMA, Vermillion, S.D.
April 2, 1965—
Annual Dinner Dance USD School of Medicine, Sioux Falls, South Dakota
April 11, 1965—
Council meeting, Huron, South Dakota

Respectfully submitted,
James P. Steele, M.D., President

The report of the President was considered and the Committee wishes to commend him for his diligent work in the cause of the free practice of medicine in South Dakota. It was the feeling of the Committee that he be commended for visiting every District in the State, as well as attending numerous national functions.

REPORT OF THE PRESIDENT-ELECT

It has been my privilege to serve the past year as the President-Elect of our State Medical Association. The State Association did not demand too much of my time, which allowed me additional time to observe and study in order to better know the needs and functions of our Association. I attended and helped conduct the business of the Council and Executive Board of the State Association. I attended all the meetings and carried out whatever duties were assigned to me.

This last year our Association operated with new commissions, replacing the old committee arrangement in vogue for so many years. It is my opinion that many new advantageous steps have been taken, and that they should be carried out, further eliminating some overlapping and setting forth other lines in a more explanatory fashion.

It is my hope that my past experience as Councilman, and President-Elect, will help me in carrying out my duties in the shouldering of the presidency of our State Medical Association during the next year.

Respectfully submitted,
Paul Hohm, M.D.
President-Elect

The Report of the President-Elect was considered and the Reference Committee recommends the acceptance of this report.

REPORT OF THE VICE PRESIDENT

I have attended all Council meetings and Executive Committee meetings during the past year. I have also fulfilled all other duties as assigned to me by the President of the State Medical Association.

Respectfully submitted,
P. Preston Brogdon, M.D.
Vice President

The Report of the Vice President was considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE SECRETARY-TREASURER

As your officer, I have attended all Executive Committee and Council meetings during the year. The duties of this office were carried out with the assistance of the able and competent Executive Secretary, Richard Erickson and the entire headquarters staff.

Respectfully submitted,
A. P. Reding, M.D.
Secretary-Treasurer

The Report of the Secretary-Treasurer was considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE DELEGATE AND ALTERNATE DELEGATE TO THE AMA

Report on Actions of the House of Delegates
American Medical Association
113th Annual Convention
June 21-25, 1964
San Francisco

Tobacco and health, human rights, physician-hospital relations, continuing medical education, the cost of medical care, and federal subsidization of prepayment plans and health insurance companies were among the major subjects acted upon by the House of Delegates at the American Medical Association's 113th annual convention held June 21-25 in San Francisco.

During the meeting the House of Delegates considered **two resolutions introduced by the South Dakota delegation.** The resolution asking for equal "practicing physician" representation on Medical School Accrediting Committees was disapproved. Reference committee noted that each team has at least one practicing physician, but the composition should primarily consist of medical educators.

The second South Dakota resolution, concerning the intent of Bulletin #35 — Joint Commission on Accreditation of Hospitals was also considered. Representatives of Joint Commission pointed out that Bulletin #35 was a modification but that it was poorly worded. They will send out additional information clarifying the situation. Based on this, the resolution was withdrawn by the delegation.

Detailed reports were printed in AMA News, AMA Journal, and South Dakota Journal of Medicine.

EIGHTEENTH CLINICAL CONVENTION

November 29 - December 2, 1964
Miami Beach, Florida

Health care for the aging, a new teletype communications system for the medical profession, a statement on human reproduction and recommendations from the Commission on the Cost of Medical Care were among the major subjects acted upon by the House of Delegates at the American Medical Association's 18th Clinical Convention held November 29 through December 2 in Miami Beach, Florida.

Health Care for the Aging

Definitive action on the issue of health care for the aging came with the House of Delegate's strong endorsement of Dr. Ward's Monday address, in which he declared that "We have no choice except to stand firm in our efforts to prevent the standards of health care in this country from being undermined by a radical departure from the unique American way which has accomplished so much for mankind."

The House took no action on three resolutions which would have altered the AMA position on health care legislation. Instead, the House adopted a resolution which urged "component associations to stimulate the state and local governments to seek the fullest possible implementation of existing mechanisms, including the voluntary health insurance principle, to the end that everyone in need, regardless of age, is assured that necessary health care will be available."

The state medical societies also were urged to send representatives to two forthcoming conferences related to the issue of health for the aging — one on December 13th to help plan the new educational program and the other on January 9-10, 1965 to consider further implementation and expansion of the Kerr-Mills programs.

Note: Dr. Robert H. Quinn, Chairman of the Commission on Legislative Activities and Governmental Relations; **Dr. C. L. Vogele,** Chairman of the Commission on Communications; and **Richard C. Erickson,** Executive Secretary, attended the December 13th meeting in Chicago.

Teletype Communications System

The House approved a recommendation from the Board of Trustees for establishment of a teletypewriter communications service between the AMA and the state medical societies. The system will provide automatic and uninterrupted communications

between AMA Headquarters and all participating state societies, and between the state societies without involving the facilities at the AMA Headquarters. The system also will enable any state society to communicate with all other TWX subscribers in the United States and Canada.

In approving the recommendation, the House emphasized that participation is optional with the state medical societies but it also urged each society to "seriously consider taking advantage of this rapid communications system." Installation and rental costs for the teletype equipment, both at AMA Headquarters and at the headquarters of each participating medical society, will be paid by the AMA. The cost of transmitting messages will be paid by whichever organization originates each message. It is hoped that the new communications system will become operative no later than July 1965.

HUMAN REPRODUCTION — problem discussed by House which adopted a four point statement.

1. Population control is responsibility of medical practice as well as parenthood.
2. Medical profession should accept major responsibility in matters related to human reproduction, affecting total population and individual family.
3. Physicians must be prepared to provide counsel and guidance.
4. AMA will disseminate information to physicians on all phases of human reproduction.

COST OF MEDICAL CARE — studies will continue, but House approved 33 recommendations dealing with research, hospitals, and physicians.

MISCELLANEOUS ACTION —

a. AMA to co-operate with Public Health Service to eradicate the Aedes Aegypt mosquito from American hemisphere.
b. AMA urged strong support of Woman's Auxiliary with idea of joint husband-wife membership.
c. Emphasized continued awareness of demand for need of a "family physician."
d. **Agreed there should be no increase in AMA dues.**

Detailed reports were printed in AMA News December 7, 1964, in AMA Journal and the South Dakota Journal of Medicine.

SPECIAL SESSION HOUSE OF DELEGATES OF AMA
February 6-7, 1965
Chicago, Illinois

A special session of the House of Delegates of the AMA was called February 6-7, 1965 in Chicago, Illinois. Present at the House and Reference Committee meetings were A. P. Reding, M.D., Delegate, A. A. Lampert, M.D., member of the AMA's Legislative Committee, and Richard Erickson, Executive Secretary. They met to consider current legislative problems.

HEALTH CARE LEGISLATION — and proposals adopted by AMA House of Delegates include:

1. That House of Delegates reaffirm position established by the AMA House of Delegates on federal medical care programs at the 1964 Miami Beach meeting, which urged component associations to stimulate state and local government to seek the fullest possible implementation of existing mechanisms, including the voluntary health insurance principle, to the end that everyone in need, regardless of age, is assured that necessary health care is available.

2. That House of Delegates enthusiastically support program of the AMA as announced by President Donovan Ward on January 9th and as implemented in H.R. 3727 (introduced by Representatives Herlong and Curtis in the 89th Congress).

3. That House of Delegates reaffirm its opposition to principles embodied in S. 1 (Anderson) and H.R. 1 (King) which require direct earmarked payroll tax to support federal medical service program for all persons over 65 years of age, regardless of their need.

4. That House of Delegates reaffirm its confidence in the AMA Board of Trustees, and its Task Force on current legislative problems, and does empower the Board of Trustees (a) to support legislative position the Board finds desirable and in consonance with existing AMA policy, (b) to develop a vigorous campaign of public education in support and implementation of his positive legislative position.

5. That AMA Board of Trustees, the Council on Medical Service, and the Council on Legislative Activities (a) study the desirability and feasibility of extending the principle of federal and state aid under the Kerr-Mills principle to persons below the age of 65 who need help (b) report their recommendations as early as possible to the AMA Board of Trustees and House of Delegates as a basis for formulation of future AMA policy in this regard.

6. House of Delegates urged the AMA to seek the deletion of physicians professional services from any hospitalization bill pending before Congress, ie, Pathologists, Radiologists, and Anesthesiologists.

This report was published in the South Dakota State Medical Association's Newsletter, "The Grab Bag," February 10, 1965. The AMA News, February 15, 1965 gave a detailed report on **ELDERCARE** and the Education Program which was being stressed in every state.

Respectfully submitted,
A. P. Reding, M.D., Delegate
Robert H. Quinn, M.D.,
Alternate Delegate

The Report of the Delegate and Alternate Delegate has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE SPEAKER OF THE HOUSE

My report: As speaker of the House I have attended all Council Meetings and meetings of the Executive Committee.

Respectfully submitted,
Speaker of the House
Robert R. Giebink, M.D.

The Report of the Speaker of the House has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR-AT-LARGE

As Councilor-at-Large I attended the meetings that were held during the year. Perhaps the most significant thing accomplished was representing South Dakota at the AMA's Special Meeting for Kerr-Mills Legislation which was held in Chicago in January, 1965. I found this meeting to be very interesting, although highly controversial.

As South Dakota's representative I voted in favor of the Elder-Care type program and also the proposed amendment of it's extension to people of all age groups, rather than those over sixty-five. This latter amendment of benefits for people of all ages was defeated but in talking to physicians in South Dakota I felt that our State, as a whole, favored this type program and, therefore, voted accordingly. Since that time in January there has been a great deal of criticism leveled against this "Almighty Old Guard of the AMA" and, certainly, the Press misrepresented this grossly. I personally attended, visited the delegates, and voted. The Press did misrepresent us. This was by no means an "Old Guard" action; since ninety percent of the people present, including myself, had never attended an AMA meeting, to this point, and we were certainly well under sixty.

I am certain that this Elder-Care bill will not pass by the Congressional barrier but, perhaps, will in some way influence our legislators in their endeavor to provide medical services for aged people.

The one other activity of the office of Councilor-at-Large has been that of a recent appointment as a member to the State Welfare Commission of South Dakota. How this will turn out, I do not know.

Respectfully submitted,
Robert H. Hayes, M.D.
Councilor-at-Large

The Report of the Councilor at Large has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE CHAIRMAN OF THE EXECUTIVE COMMITTEE

During the past year the Executive Committee has held only two meetings and those have been in connection with regular Council Meetings.

Fortunately the affairs of the Society have not required any emergency action during the past year.

The details of the actions of the Executive Committee are reported elsewhere in the report of the Council and of the report of the President of the Association.

Respectfully submitted,
James P. Steele, M.D.
President

The Report of the Chairman of the Executive Committee has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE EXECUTIVE SECRETARY

After completing my first full year as your Executive Secretary, I have come to realize the full value that an executive office can offer to its membership. Your staff has continued to try to render any and all services, not only to the Association as a whole, but to the individual physician.

LIAISON WITH DISTRICT SOCIETIES

During the year, your Executive Secretary has endeavored to attend as many district society meetings as possible. Many of the meetings attended were in conjunction with the annual visitation of the President, Dr. Steele. As of the time of this report, I have attended fifteen (15) district meetings. It is contemplated that an additional four will be visited by the time of the annual meeting.

PUBLIC RELATIONS

Public relations, on behalf of the professional, has been a very important part of the past year's activities. Your Executive Secretary attended sixteen (16) meetings within the state, with various groups such as Medical Assistants, Clinic Managers, Hospital Association, governmental bodies, Farm Bureau, Health Underwriters, etc. In addition, ten (10) national meetings were attended. A total of 32,000 miles were traveled by myself on behalf of the Association. Both Mrs. Butler and Mr. Tuffs also attended a number of meetings. One of the highlights of the year was a successful Medical-Legal Conference which was held in Pierre, this past fall. A continued program of improved Public Relations will be carried on by your staff.

HEADQUARTERS BUILDING

During the year, all interest due on notes was paid, in addition to retiring $2,101.33 in notes. Mr. John Zimmer, Attorney, was successful in obtaining a favorable decision from the Court concerning the tax exemption for our building. However, it is possible that the decision may be taken to the Supreme Court. In any event, we are very pleased with the work Mr. Zimmer has performed in behalf of the Association.

COMMISSIONS

This year saw the inception of the Commission system within your Association, plus eliminating the old Committee structure. It would appear that this system is a good one, although it will probably take a year or two more before a fair evaluation can be made. Most of the Commissions have met at least once during the year and your Executive Secretary has attended twelve (12) Commission Meetings. A vote of thanks is due the six Commission Chairmen and the sixty-six (66) doctor members who carry on the most important work of the Association.

LEGISLATION

As in the past, a great deal of time and effort has revolved around State and National legislative activities. This year the Association sponsored a bill revising the Insanity Hearing Form. This bill met with the approval of the Legislature and passed. In addition, the Association endorsed a bill liberalizing the income limits under the MAA program, a bill for unlimited Workmen's Compensation benefits, and a bill dealing with the regulation of amphetamines. All of these bills met with favorable consideration by the Legislature and all passed the House and Senate. The Workmen's Compensation bill was amended, extending the hospital, surgical-medical maximum benefits to $21,700.00.

On the national scene, the Association was again faced with the possibility of Federal "Medicare" Legislation. The Association carried out an educational program including newspaper ads, mailings to Chambers of Commerce and Commercial Clubs, pamphlets, survey forms and petitions for physicians offices, and public appearances.

BLUE SHIELD AND OTHER FISCAL PROGRAMS

The fiscal programs of the Association including Blue Shield, Old Age Assistance, Medical Aid to the Aged and the Army's Medicare Program have continued their growth during the past year. As of December 31, 1964, Blue Shield had 26,550 contracts in force, a gain of 4,192 contracts for the year. Blue Shield's income exceeded $1,000,000 and the corporation paid out a record $897,000 in claims benefits, O.A.A., M.A.A., and Medicare added approximately $400,000 in additional benefits. Thus the physicians and subscribers of South Dakota received in excess of $1,200,000 in payments made by our Blue Shield operation.

THE JOURNAL

During the past year, the Journal's financial condition has continued to improve and your Executive Secretary is happy to report that the $2200 account owed the printer as of last year, has been satisfied. A big change in the JOURNAL took place in March with the elimination of the Pharmacy Section. It is our intent that within the coming year, the JOURNAL will:

1. provide more and better scientific articles, and
2. provide a margin of surplus, thus eliminating the need of subsidy by the Association.

SUMMARY

It is somewhat difficult to summarize all of the work that has been carried on during the year by your officers, Councilors, Commissions, and office staff. It is not difficult, however, to report that all activities are channeled in one direction, that of service to the physicians of South Dakota. Your Executive Secretary would like to thank all of the physicians, plus the staff of fourteen people, who have made my first year a successful one.

Respectfully submitted,
Richard C. Erickson
Executive Secretary

The Report of the Executive Secretary was considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR FIRST DISTRICT

MEMBERSHIP: 44 Members
OFFICERS:
PRESIDENT:
Carson B. Murdy, M.D.
VICE PRESIDENT:
Paul Leon, M.D.
SECRETARY-TREASURER:
William R. Taylor, M.D.
COUNCILOR:
E. J. Perry, M.D.
CENSORS:
J. A. Eckrich, Sr., M.D.
John Calene, M.D.
E. A. Rudolph, M.D.
DELEGATES:
G. J. Bloemendaal, M.D.
Paul Bunker, M.D.
B. C. Gerber, M.D.
ALTERNATE DELEGATES:
Karlis Zvejnieks, M.D.
Albin J. Janusz, M.D.
R. A. Standard, M.D.

The Aberdeen District Medical Society holds monthly dinner meetings on the first Wednesday of each month from September to June. The following is a list of events and speakers:

SEPTEMBER:
The guest speaker was Charles B. Kelly, D.D.S.

of Aberdeen, who related his experiences aboard the S.S. Hope in Ecuador, South America.

OCTOBER:
Karl H. Kosse, M.D. of Aberdeen spoke on "Microsurgery in Reconstruction of the Ureter."

NOVEMBER:
James P. Steele, M.D., President of the South Dakota State Medical Association visited the Aberdeen District. Doctor Steele addressed the combined meeting of the Woman's Auxiliary and the District Society.

DECEMBER:
The annual election of officers and committee appointments was accomplished.

JANUARY:
W. E. Bormes, M.D. of Aberdeen spoke on "Cardiovascular Surgery."

FEBRUARY:
The guest speaker was David Seaman, M.D., Ophthalmologist from Aberdeen who spoke on "Ocular Emergencies."

MARCH:
Patrick Beckham, M.D., Resident in Surgery, from Hennepin County Hospital, Minneapolis, Minnesota spoke on "Practical Application of the Theory of Hyperbaric Oxygen."

APRIL:
R. R. Ivers, M.D., Neurologist from the Neuropsychiatric Institute, Fargo, North Dakota spoke on "Clinical Application of the Electroencephalogram."

MAY:
Herbert C. Leiter, M.D., Dermatologist from Sioux City, Iowa spoke on "Skin Cancer, Diagnosis, and Therapy."

Respectfully submitted,
E. J. Perry, M.D., Councilor
First District

The Report of the Councilor from the First District Medical Society has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR SECOND DISTRICT

MEMBERSHIP: 26 Members

OFFICERS:

PRESIDENT:
Theodore Wrage, M.D.

VICE PRESIDENT:
Donald Fedt, M.D.

SECRETARY-TREASURER:
Eberhard Heinrichs, M.D.

COUNCILOR:
John Stransky, M.D.

CENSORS:
Burke Brewster, M.D.
Charles Ryan, M.D.
John Stransky, M.D.

DELEGATES:
Parry Nelson, M.D. (Two years)
Gerald Tracy, M.D. (One year)

ALTERNATES:
C. J. Clark, M.D.
Roman Auskaps, M.D.

The Watertown District Medical Society holds monthly dinner meetings on the first Tuesday of each month from September to June. In addition to the regular business meetings, the following scientific programs were presented during the year:

MAY:
Richard Erickson, Executive Secretary SDMA, met with the Society to review the planning necessary for the State Medical Association Meeting in Watertown in May of 1965. He also discussed some of the proposed changes in the Blue Shield program.

SEPTEMBER:
Annual visitation by President of SDMA, J. P. Steele, M.D.

FEBRUARY:
"Modern Estate Planning" presentation by Attorney Irving Hinderaker, Watertown.

MARCH:
"Pulmonary A-V Fistula" presentation of case along with discussion of diagnosis and treatment by Dr. C. F. Ryan, Watertown.

This Society notes with regret the death of one of its members, R. T. Maxwell, M.D.

Respectfully submitted,
John J. Stransky, M.D., Councilor
Second District

The Report of the Councilor from the Second District Medical Society was considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR THIRD DISTRICT

The first meeting following the State meeting in 1964 was held at the Brookings Country Club on June 11th, 1964. There was a short scientific talk by Dr. H. E. Davidson of Sioux Falls on psychiatry, followed by the business meeting at which time Richard Erickson, the State Executive Secretary, explained some of the controversial issues that were brought up at the House of Delegates at the State Meeting. Dr. Wold brought up certain questions about Blue Shield and Blue Cross contract coverages which seemed to result in unfairness to others of the general public, not so favorably covered.

The second meeting was held at the Madison Country Club, August the 13, 1964. At the business meeting Dr. Lushbough gave a short report on AMPAC and it was decided that the Third District would participate in the proposed program of advertising and public education about the affairs that AMPAC and SoDaPaC support. Following the business meeting, Dr. George Knabe presented an interesting and instructive slide talk on his travels in Peru while a member of the "Hope" project.

The third meeting was on October the 8th in Brookings at the new Brookings Hospital. At this time we had the official visit of Dr. J. P. Steele, the State President of the Medical Association who discussed current topics of importance. He was followed by Richard Erickson, the Executive Secretary, who informed us about the State-Wide advertising program sponsored by the AMA to acquaint the public with the present advantages of Kerr-Mills. Doctors Reagan and Belatti brought up the matter and discussed the policy to be decided with regard to the pre-school immunization procedure, surveys, location of records, administration and more particularly the activities of the department of Health, Education and Welfare in this field. It was then moved and seconded and passed that the District go on record as approving the local physician-instituted, operated and controlled Clinics for the purpose of immunization, vaccination programs as opposed to the Department of Health, Education and Welfare controlled Clinics. After consulting the Auxiliary, it was decided that the District secretary be instructed to integrate the billing of the auxiliary dues for 1965 in the amount of $10.00 per member, along with the billing of the local, state dues for physician members. The scientific portion of the meeting was a talk by Dr. Bloemendaal of Sioux Falls on the diagnostic testing for PKU.

The 4th meeting of the Third District was held in Flandreau on December the 10, 1964. The scientific portion of the meeting consisted of Dr. R. C. Knowles of Sioux Falls talking on Child Psychology. At the business session, Dr. Belatti reported on the immunization program that was held in Madison. The Clinic was held and a reduced rate of $1 for each procedure was extended to the public. This was extremely successful. Dr. Scheller reported on a letter from President Anderson, enclosing a resolution and suggestions for improving the annual state meeting. It was then suggested that this be turned over to the appropriate commission of the State Medical Society to take this under the advisement and bring forth some recommendations. The next order of business was the election of officers. The president was Dr. Lushbough; Vice President, Dr. Richard Belatti; Secretary-Treasurer, Dr. Calvin Kershner; Delegates, Drs. Scheller and Anderson; Alternates, Drs. Wold and Muggly; the Censors were Drs. Friefeld, Roberts and Turner.

The fifth meeting of the Third District Medical Society was held in Madison February 11, 1965. At the business session Dr. Scheller brought up the matter of recommendations by the district for changes to improve the annual meeting, for discussion. The following suggestions were expressed:

1. Specialty groups might have their own and separate meetings with the possibility of having speakers which might appear also at the annual meeting.
2. The Council might consider the date of the annual meeting as well as the place of meeting to be more acceptable to the majority of the membership and also there was a request that Dr. Sherwood be placed on honorary membership status. After his qualifications were read, Dr. Sherwood was awarded honorary status, in the Third District.

Dr. J. A. Anderson of Madison was suggested for the Nominating Committee to be appointed by the State President.

Although the meetings for this year have not been quite as controversial as previously, we feel the Third District has had a good year.

Respectfully submitted
M. C. Tank, M.D.
Councilor

The Report of the Councilor from the Third District Medical Society has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR FOURTH DISTRICT

As Councilor for the Fourth District Medical Society, I have the following report to make:

We had a scientific meeting here in Pierre in May of 1964, with Dr. C. B. McVay as speaker.

Another meeting was held January 18, 1965 at which time the state president, Dr. J. P. Steele, visited the Fourth District Society. At this meeting the State Executive Secretary, and an AMA representative discussed Eldercare with the members of the district.

An election of officers was held with the following officers elected:

President —
R. J. Zahaki, M.D.
Vice President —
Barbara Spears, M.D.
Secretary-Treasurer —
J. T. Cowan, M.D.
Delegates —
R. C. Jahraus, M.D., and H. E. Werthmann, M.D.
Alternate Delegates —
C. L. Swanson, M.D., and S. B. Simon, M.D.
Nominated for the Council —
M. M. Morrissey, A. J. Tieszen, and G. J. Van Heuvelen, M.D.
Nominating Committee —
R. C. Jahraus, M.D.
Censors —
Barbara Spears, M.D.—1 year
S. B. Simon, M.D.—2 years
S. W. Fox, M.D.—3 years

Respectfully submitted,
L. C. Askwig, M.D.
Councilor, Fourth District

The Report of the Councilor from the Fourth District Medical Society has been considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR FIFTH DISTRICT

During the year 1964-1965, there were three Huron District Medical Society meetings held, and one more meeting will be held before the meeting in May, following the dictation of this report.

On May 7, 1964, a dinner meeting of the Huron District Medical Society was held, with Dr. Ted Hohm, President, presiding. The preceptees from the University of South Dakota Medical School were presented by their corresponding preceptors. Mr. Richard Erickson, Executive Secretary of the State Medical Society, also was present.

The president announced that the following doctors are now members of the 5th District Society: Dr. Clifford Lardinois; Dr. Carlos Mendoza; Dr. Will Hohm; and Dr. Tom Hines.

It was decided by the membership to donate the polio money from the clinics to the South Dakota Medical School Endowment Fund. A motion by Dr. Charbonneau to send $4,000 to the fund and $200 to the Central South Dakota Mental Health Center was presented. This was seconded and passed unanimously. Discussion followed about publicizing this gift. A motion was introduced by Dr. W. Hanson to publish the fact that the money collected from the polio vaccinations will be donated to the medical school and to the mental health center without specifying the amount; seconded, and passed. Dr. Ted Hohm will release a short note to the Huron paper.

Regarding physical examinations of athletes, Dr. Ted Hohm polled the coaches in the area and found that they were against bringing the students in before the season starts. It was the consensus of the membership that the physical examinations should be done for groups of athletes and physicians should charge for the service, if so desired. Dr. Robert Bell stated that he sent a letter to the principals of De Smet schools that the price of examinations should be increased by fifty cents to cover the cost of urinalysis.

The District Medical Society sent $100 to the Medical School scholarship in memory of Dr. Pangburn, of Miller. A letter from Dr. W. Hard, Dean of the school, was read.

A discussion about the different government agencies and forms asking information about patients was brought up by Dr. Charbonneau. The possible legal implications in disclosing patients' ailments were discussed by Dr. F. D. Leigh and Mr. Erickson. A similar matter will be presented at the State meeting and Dr. Leigh, Councilor, will report on it.

Dr. Leigh announced that the Board of the Central South Dakota Mental Health Center will meet soon, and any constructive criticism will be appreciated.

Concerning the coming State meeting, the Councilor, Dr. Leigh, talked about the subjects that will be presented and the way the delegates should vote. He discussed the price scale set by the fee advisory committee and stated it is not ready to be presented to the House of Delegates this year.

Dr. Paul Hohm, Chairman of the Blue Shield Board, discussed the tremendous growth of the Blue Shield plan in the past years, which at present has about 23,000 contracts with over a one-million dollars a year business. The South Dakota doctors benefit directly from this as the average collected about $3,000, with some going as high as $14,000. The Blue Shield Board feels that in order to continue growing and to meet the new challenge of other plans, the high limit of the National Government contracts should be raised to $7,500. A motion to instruct the delegates to accept the new limit, proposed by the Blue Shield Board was presented by Dr. Ted Hohm, and seconded by Dr. Gryte. Motion carried. The delegates were so instructed by the Chair.

Dr. Paul Hohm recommended that the National account be accepted. This was presented in the form of a motion by Dr. David Buchanan, seconded by Dr. E. Hofer. Motion carried. There was a brief talk about the next State meeting by Mr. Richard Erickson. The business and scientific portions of the meeting were delineated by Mr. Erickson.

Meeting adjourned.

On August 20, 1964, a meeting of the Huron District Medical Society was called to order by the president, Dr. Ted Hohm. Two letters from Richard Erickson, Executive Secretary, were read. The first one regarding the endowment plan was discussed by the membership. No action was taken. The second was concerning the fight against Medicare. The ads to be placed in the newspaper during the month of October were included.

There was a motion to leave it to the officers to decide whether to place the ad, and which one. Dr. Bell suggested the ad be placed in a weekly newspaper that has more circulation.

A letter from Mr. Ben Hines, State Director of Vocational Rehabilitation, was read regarding the naming of five doctors from this area to act as District Medical Consultants for this department. He gave a choice of the District Society picking the doctors, or allowing his office the selection. Discussion followed. There was a motion to ask the State officers to pick five doctors. A letter will be written, stating that we agree with the idea of District Consultants. Motion carried.

There was a report from the Councilor, Dr. Fred Leigh, who reported that Dr. Paul Hohm is president-elect. The State convention, 1966, will be in Huron.

Also, the by-laws were changed. Now we have commissions instead of committees. There was also a change in the insanity forms. Discussion about the legal status of doctors regarding information given which may affect the qualifications of patients to obtain a driver's license was carried out.

Dr. Paul Hohm discussed Blue Shield covering three main points.

1. Raise of high income level to $7,500 for a married couple, and $6,000 for a single person and National contracts. There was a fight during the meetings with Yankton and Sioux Falls.
2. To offer this high option to people in the State.
3. Signing up doctors by participation at the fee schedule set by the Board.

There was a motion, seconded and carried unanimously, that the Huron District Medical Society write a letter to the State Board of Blue Shield, supporting its recommendations and giving them a unanimous vote of confidence. Dr. Leigh announced the next Council meeting will be September 27, 1964 in Pierre.

Meeting adjourned.

On November 19, 1964, a meeting of the Huron District Medical Society was called to order by the president, Dr. Ted Hohm.

The president of the South Dakota State Medical Association Dr. Steele, Executive Secretary, Mr. Erickson, and Mr. Randall Tuffs, Claim Manager of Blue Shield, were guests. Under correspondence, a letter from Mr. Erickson was read requesting that the auxiliary dues be billed with the regular dues. This subject was further explained by Mr. Erickson. Dr. Buchanan made a motion that they should be included in the regular billing from the Society, seconded and carried.

There then was an election of officers. Dr. David Buchanan was duly nominated and elected for President. Dr. DeGeest was duly nominated, seconded, and motion carried, to be elected vice-president. Dr. G. M. Huet was duly elected as Secretary-Treasurer. There was a motion by Dr. Buchanan, seconded by Dr. Lenz, that the past president be the delegate to the State Convention this year, this being Ted Hohm and Bill Hanson. This was duly carried. There was a motion made, seconded and passed, electing Dr. Hofer to the Board of Censors.

The Councilor, Dr. Leigh, reported that at the last meeting it was resolved that out-of-state M.D.'s do not have to pay registration fees at the State meeting. The Council will meet at noon and the House of Delegates at 1:30 P.M., followed by the Blue Shield Board and reference committees. Mr. Erickson talked about the importance of the committees and urged attendance at the next meeting.

Dr. Ted Hohm discussed the new podiatrist in Huron, as the question has arisen about his status, whether he can do surgery, and prescribe. Mr. Erickson stated that they are allowed to prescribe medications with the exclusion of narcotics. They do not have to take basic science examinations. Dr. Steele commented that only the Medical Board Licensees are allowed to prescribe narcotics. The podiatrist can do surgery below the ankle. Dr. Steele informed that most podiatrists are on hospital staffs. Mr. Erickson will ask for a clarification from the attorney general about the status of a podiatrist. Some discussion followed.

Dr. Steele, President of the State Society, talked about the merger between M.D.'s and D.O.'s in California, and the possibility of the AMA recognizing them. This should be kept in mind when dealing with D.O.'s.

Watertown will be the next place for the State meeting. He asked that as many people as possible attend. He also talked about organizing medicine against socialization by making friends with the people, as maybe then they will not vote against us. We should also control the amount that the patient spends in drugs and hospitals, as otherwise the governing boards of the hospitals do it, and usually they are not qualified people. We are losing the fight against Medicare due to the poor image of the AMA, as described by the government. One Medical Society actually asked the AMA to change its stand on Medicare.

In talking about the next State meeting, he asked that resolutions be given to the Councilor to be placed on the agenda, then placed in the corresponding reference committee, which will give a report, and then will be voted by the House of Delegates.

The delegates should be instructed to follow the resolution in the reference committee and in the House. Dr. Leigh announced that the next Council meeting will be January 10, 1965, in Sioux Falls. Discussion followed about socialized medicine.

Meeting was duly adjourned.

Because of the request for this report the first part of March, there will be one more meeting of the Huron District Medical Society this month before the proposed Council meeting here in Huron on April 11th. We will also have a meeting in early May just before the medical convention in Watertown in order to duly instruct our Councilor and our two delegates.

Respectfully submitted,
F. D. Leigh, M.D.
Councilor, Fifth District

The Report of the Councilor from the Fifth District Medical Society was considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR SEVENTH DISTRICT

MEMBERSHIP: Active 117; Life Members 11

The Sioux Falls District Medical Society holds its meetings at the Westward Ho Country Club on the first Tuesday of each month except during June, July, and August. The Board of Directors meets on the Monday preceding the regular meeting and on call of the president during the summer months.

MAY 5, 1964

Dinner was followed by a business meeting at which plans were finalized for the 83rd Annual Meeting of the State Medical Society which will be held in Sioux Falls, May 30th through June 2nd.

SEPTEMBER 1, 1964

Dinner followed by business meeting. At this meeting a plea was made for greater and continued financial support for the Medical School Endowment Association. It was suggested that all doctors follow the old established plan of giving one dollar for each year of practice.

OCTOBER 6, 1964

Dinner followed by business meeting.

NOVEMBER 3, 1964

Dinner followed by business meeting. Three men were accepted as new active members of the Society. Approval was given to the Life Insurance Underwriters Group of Sioux Falls to use our name in the "Medic Alert" promotional program.

DECEMBER 1, 1964

Dinner followed by business meeting. Election of the following officers:

President — E. W. Sanderson, M.D.
Vice President — J. B. Gregg, M.D.
Secretary — B. J. Begley, M.D.
Treasurer — D. L. Ensberg, M.D.

JANUARY 5, 1965

James P. Steele, M.D., of Yankton, President of the South Dakota Medical Society was a guest at this dinner meeting and gave an informative and instructive talk on problems confronting doctors generally and South Dakota doctors particularly.

FEBRUARY 2, 1965
Dinner meeting of members and wives. No business meeting.
MARCH 2, 1965
Dinner followed by business meeting.
APRIL 6, 1965
Dinner followed by business meeting. Several resolutions to be presented at the Annual State Meeting were voted upon and passed. The members also voted to start proceedings for incorporation of the Seventh District Society.

Respectfully submitted,
E. T. Lietzke, M.D.
Councilor, Seventh District

The Report of the Councilor from the Seventh District Medical Society was considered. The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR EIGHTH DISTRICT

On May 13, 1964, the meeting was conducted by Dr. R. J. Foley, President, at the Kochi Club, Yankton. Routine committee reports were received, including a detailed report on immunization studies, which included recommendations sent to the State Medical Association in this regard. Mr. R. C. Erickson, Executive Secretary of the South Dakota Medical Association, presented and discussed various aspects of the Blue Cross and Blue Shield programs, as well as the MAA Program, which was still in the negotiation stage with the State government agencies. A report by Dr. J. T. Tidd on blood donor banks was discussed, and the District voted to oppose control by an Interstate Commerce Commission. A scientific program on "Basophile" was provided by Dr. Rebush, Department of Hematology, Henry Ford Hospital.

On September 17, 1964, the meeting was held at the Yankton State Hospital. Dr. L. G. Behan, scientific program speaker discussed the needs of the state with respect to intensive care units and other aspects of mental health. Application of Dr. Alan H. Domina, Tyndall, was approved for membership. Approval was given the National AMA educational program. The Society approved sponsorship of ads in newspapers within the District. Dr. J. P. Steele, President of the South Dakota Medical Association, discussed the various programs of the State Association, and discussed their significance as pertaining to all physicians, as well as the general public.

The meeting was held December 3, 1964, at the Prairie Restaurant, Vermillion. A scientific program on "Recent Concepts on Shock" was presented by Col. Robert Hardaway. The application of Dr. Frieda C. Hendeles, Yankton State Hospital, was read and approved for membership. The appointment of doctors to act as consultants on the Vocational Rehabilitation Board, as requested by the State Association, was approved. The President and the Executive Committee were to make these recommendations for the five consultants requested. Dr. J. P. Steele discussed, in detail, federal legislation, particularly Medicare. Mr. R. C. Erickson was present and discussed the OAA crisis regarding funds and the recommendations of the State Association regarding limitation of hospitalization in order to carry the program through to the end of the fiscal year.

On February 19, 1965, the meeting was held in Yankton at the Black Steer Restaurant. The scientific presentation was by Dr. L. E. Savage. He discussed recent advances in peripheral vascular disease treatment and diagnosis. It was reported that the Vocational Rehabilitation Consultants were: Drs. C. F. Johnson, F. W. Haas, C. B. McVay, T. H. Sattler, and H. C. Andre. The application of Dr. L. E. Savage, Yankton, was approved for membership. Officers elected for 1965 were as follows:

President — Dr. R. F. Thompson, Yankton
Vice President — Dr. D. M. Reade, Yankton
Secretary — Dr. G. Knabe, Vermillion
Treasurer — Dr. N. B. Saoi, Yankton

Delegates to the House of Delegates, SDMA, were:
Dr. G. Knabe, Vermillion
Dr. R. J. Foley, Tyndall

Alternate delegates were:
Dr. H. C. Andre, Vermillion
Dr. L. G. Behan, Yankton

Recommendation for Councilor of the Eighth District was:
Dr. C. F. Johnson, Yankton

Alternates were:
Dr. T. H. Willcockson, Yankton
Dr. R. F. Hubner, Yankton

Respectfully submitted,
T. H. Sattler, M.D.
Councilor, Eighth District

The Reference Committee recommends the acceptance of this report.

BLACK HILLS DISTRICT MEDICAL SOCIETY REPORT OF THE COUNCILOR NINTH DISTRICT

The following is the Annual Councilor's report which is the summary of the activities of Black Hills District Medical Society for the year 1964. The officers elected for the year 1964, were as follows:

President — A. J. Semones, M.D., Lead, S. D.
Vice President — G. S. Paulson, M.D., Rapid City, S. D.
Secretary-Treasurer — H. L. Frost, M.D., Rapid City, S. D.

There were six regular meetings of the Society during the year, plus the special medical seminar which was held in August. A review of the regular meetings is as follows:

January: A special Committee of Medical Technology and Nursing Scholarships was established. The duties of this committee would be to collect funds from the District membership and the Auxiliary for the purpose of aiding students in their careers in Medical Technology and Nursing. During the first year approximately $750 were collected, $600 of which was distributed as direct grants to students. Dr. Robert S. Jones presented a Scientific discussion on the "West River Medical Health Center and its Services."

April: Meeting held at V. A. Center, Hot Springs. Robert Hayes, M.D., president of SDSMA, visited the District and spoke briefly on the problem of the Chiropractor and the practice of Medicine. This discussion was co-ordinated with a discussion of a specific problem concerning chiropractor activities in Rapid City. The Scientific Program was presented by Matthew H. Block, Department of Hematology, University of Colorado, who discussed the relationship of the "Thymus, Lymphocytes, and Antibodies."

May 21: This meeting normally scheduled for June was held early in order to have a District Meeting prior to the SDSMA meeting in Sioux Falls. The feasibility of establishing a Breast Cancer Detection Clinic was discussed at length and most physicians disapproved of establishing such a program in this area. Mr. Richard Erickson presented a discussion of the high level service benefit Blue Shield Plan. The "Scientific Program" was presented by Dr. D. L. Kegaries, "An Unusual Case of Addison's Disease Developing in a Diabetic." Dr. Theissen introduced a program on Politics and the Physician with motion picture which was attended by the Women's Auxiliary.

August: This meeting, the annual fish fry, was held in Spearfish, South Dakota. The application of Dr. Robert K. Johnson of Rapid City, South Dakota, was accepted. There was discussion concerning the problems associated with hospitalization of tuberculous patients. It was moved and unanimously accepted that this Society go on record as favoring the appointment of a full time physician as director of the State Tuberculosis Program. Dr. Steele, new president of SDSMA addressed the group and urged increased activity among the local societies and participation by individual physicians in efforts to keep Hospital and drug costs down. Dr. Walter Hard, Dean of the Medical School, University of South Dakota, discussed the merits of the Medical School Endowment Fund.

The Third Annual Black Hills Medical Seminar was held on August 7th and 8th at the Surbeck Center on the campus of the South Dakota School of Mines and Technology. There were 109 physicians who registered for the two day Seminar, 88 of these from South Dakota, 21 from surrounding states. Twelve of the South Dakota physicians were from the East River Area. There were 9 guest speakers, supported jointly by the South Dakota Chapter of the American Cancer Society, South Dakota Heart Association, Veterans Administration, Charles Pfizer Laboratories and the Black Hills District Medical Society. This Seminar included a broad spectrum of topics. The program was enthusiastically accepted and because of its success, the 4th Annual Meeting is planned for sometime in August of 1965.

The October Meeting was held in Rapid City, at which time the question of the tax exempt status of the District Medical Society was discussed. The secretary was instructed to contact the State Medical Association and Local Tax Authorities for clarification on this point inasmuch as the seminar and student scholarships might be affected and donations ineligible for deduction under IRS regulations. A motion was introduced to authorize the Secretary of the District Medical Society to act as collecting agent for the District Medical Auxiliary dues, however, this motion was defeated. The Scientific presentation was by Dr. Henry Job, Gastro-enterologist of Denver, who presented a paper on "Ulcerative Colitis, a Review of the Last 100 Cases seen at the Denver Clinic."

The December meeting was also held at Rapid City. Letters from SDSMA and from Mr. Warren May, Attorney for the Medical Association, concerning the tax status of the Society were read, both letters indicating that the District Society need not apply for exemption under the IRS rules at the present time. A letter from the 7th District Committee on Immunization procedures regarding the State Department of Health Immunization schedule was discussed and was referred to the Pediatricians for studies and recommendations. A resolution was drafted which, in cooperation with the Pennington Bar Association, would invite South Dakota Medical Legal Conference to Rapid City for its bi-annual meeting in 1966. The Scientific presentation was made by W. O. Read, Ph.D., Professor and Chairman of the Department of Physiology and Pharmacology School of Medicine, University of South Dakota, who discussed studies of "Ventricular Arrhythmias." New Officers elected for the year 1965 were:

President — G. S. Paulson, M.D.
Vice President — H. L. Frost, M.D.
Secretary-Treasurer — Dr. John Hewitt

Respectfully submitted,
John T. Elston, M.D.
Councilor, Ninth District

The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR TENTH DISTRICT

Five regular scientific meetings were held during the year, along with the area dentists, pharmacists and veterinarians. Business meetings of the Tenth District Medical Society were held on the same evenings. In September an interesting and informative discussion was presented by Dr. Michael Ferrell and Dr. Robert Nelson of Sioux Falls. Other scientific programs were presented by physicians of the Tenth District and by Donald Nemer, D.D.S., of Gregory, South Dakota.

On January 7th a special business meeting was held at Gregory, South Dakota, with Dr. J. P. Steele as guest moderator. This meeting was held to consider and settle a grievance of one physician against another. The matter had originally been presented to the Grievance Committee, which had referred it back to our District Society to be handled at the local level. At this meeting, which 100 percent of the membership attended, it was the opinion of the majority that there was not sufficient evidence to support the charges that one of our members had made unethical use of news media and no further action was deemed necessary. The members of the Tenth District sincerely appreciate the interest and efforts of Dr. Steele in assisting in settling this matter.

At the March 18th meeting, Constitution and Bylaws of the Tenth District Medical Society were adopted. Also at that meeting the following new officers were elected: President, Marion Cosand, M.D.; Vice President, P. G. Lakstigala, M.D.; Secretary-Treasurer, Robert Hayes, M.D.; Delegate, Marion Cosand, M.D.; Alternate Delegate, P. G. Lakstigala, M.D.

In addition to business and scientific meetings, a dinner party was held during the Christmas season at the Frontier Room in Winner. This meeting was reportedly somewhat enthusiastically attended by Tenth District members and area dentists, pharmacists, veterinarians, and wives. This group is looking forward to a dinner party to be held in early June.

Respectfully submitted,
E. P. Sweet, M.D., Councilor
Tenth District

The Reference Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR TWELFTH DISTRICT

The 12th District Society held three meetings during the year at which current business was discussed. The meetings were held at Webster, Sisseton and Rosholt. The March meeting was attended by the State President, Dr. James P. Steele of Yankton, who spoke to us on Elder-Care.

Respectfully submitted,
E. A. Johnson, M.D., Councilor
Twelfth District

The Reference Committee recommends the acceptance of this report.

REPORT OF THE COMMISSION ON MEDICAL SERVICE

This Commission which deals with problems relating to: 1) Medical Education and Hospitals, 2) Insurance Programs for the Membership, 3) Prepayment plans and Workman's Compensation, 4) Medical Licensure, 5) Rural Medical Service, 6) Traffic Safety, and 7) School and Public Health; and whose members are: J. B. Gregg, M.D., Chairman; R. C. Jahraus, M.D.; G. R. Bartron, M.D.; R. Stiehl, M.D.; G. E. Tracy, M.D.; T. H. Willcockson, M.D.; L. H. Amundson, M.D.; J. Stransky, M.D.; F. R. Williams, M.D.; A. M. Semones, M.D.; and W. Jones, M.D.; held one formal meeting during the 1964-1965 year. Six Committees were appointed from the members of the Commission as follows:

Board of Directors of the Medical School Endowment Fund

F. R. Williams, Chairman
G. E. Tracy, Vice Chairman
T. H. Willcockson, Secretary-Treasurer
R. C. Jahraus
W. Jones
J. A. Anderson
E. T. Lietzke, appointed by the Council of the S. D. State Medical Association
J. B. Gregg, Ex Officio

Medical School Advisory Committee

T. H. Willcockson, Chairman
F. R. Williams
G. E. Tracy
R. C. Jahraus
W. Jones
J. A. Anderson
J. B. Gregg, Ex Officio

School Health Committee

G. E. Tracy, Chairman
L. H. Amundson
J. A. Anderson
J. B. Gregg, Ex Officio
H. W. Farrell, Special Consultant

Traffic Safety Committee

J. Stransky, Chairman

R. C. Jahraus
R. Stiehl
J. B. Gregg, Ex Officio

Rural Health Committee

L. H. Amundson, Chairman
J. A. Anderson
E. F. Kalda, Special Consultant
J. B. Gregg, Ex Officio

Hospital Utilization and Insurance Advisory Committee

G. E. Tracy, Chairman
F. R. Williams
W. Jones
J. B. Gregg, Ex Officio

Hereinafter follows the reports of the individual committees of this Commission, along with their recommendations for action by the House of Delegates of the South Dakota State Medical Association.

1) Board of Directors of the Medical School Endowment Fund

Three meetings of this Board have been held. The By-Laws, Rules and Regulations are now in the process of revision. Liaison between the office of the Dean of the Medical School of the University of South Dakota, the Students Loan and Scholarship Committee of the Medical School, and the Board has been established. Applications for student loans have been authorized by the Board. The Board has announced that there will be an exhibit by this organization, manned by the members of the Board at the coming Annual Meeting of the State Medical Association. A "$100 BOOSTER CLUB" for the Endowment Fund, consisting of those physicians who have already or who do contribute this sum to the Endowment Fund at the booth, will receive appropriate recognition.

The Reference Committee recommends the acceptance of this report.

2) Medical School Affairs Committee

Through four meetings of this Committee itself and with representatives of the Medical School, business has been conducted to the benefit of the Association. One national meeting relating to Medical School affairs was attended by the Chairman of this committee. It was his opinion after attending this meeting that South Dakota in comparison to the majority of the states has in actuality, very little problem in medical education. Control of tissue and unnecessary surgery in hospitals of this state can best be done by postgraduate education and evaluations by visiting pathologists, surgeons, and radiologists. This Committee has no specific recommendations to the Council.

The Reference Committee recommends the acceptance of this report.

3) Rural Health Committee

Two meetings have been held. Due to short notice and unavailability of the members of this Committee it was not possible for the State Medical Association to be represented at the National Rural Health Meetings. It was the opinion of the Committee, after reviewing the materials relating to teaching of First Aid in schools, that this is already being handled well on a local level in the various communities and that this committee has nothing to offer in the way of a constructive program to be spearheaded by the Medical Profession. Therefore, this committee has no specific recommendations to make to the Association.

The Reference Committee recommends the acceptance of this report.

4) Traffic Safety Committee

There have been two meetings of this Committee. Various meetings relating to Traffic Safety on a national as well as on a state level have been attended and participated in by members of this Committee. At the recommendation of this Committee, each physician has been sent pamphlets relating to driver safety. An editorial has been published in the Journal of the South Dakota State Medical Association regarding driver safety on the highways. At the recommendation of this Committee, the Council of the State Medical Association recommended to the Governor of this state the following appointees to the MEDICAL ADVISORY BOARD TO THE DEPARTMENT OF MOTOR VEHICLES:

R. Giebink, M.D., Orthopedics
C. Tesar, M.D., Ophthalmology
G. Smith, M.D., Neuro-Surgery
W. Taylor, M.D., Internal Medicine
C. Jahraus, M.D., General Practice
J. Stransky, M.D., General Surgery
L. Behan, M.D., Psychiatry

This Committee has no specific recommendations to make to the Association at this time.

The Reference Committee recommends the acceptance of this report.

5) School Health Committee

This Committee has met twice and conducted considerable business by correspondence. The following items have received consideration: a) A suggested schedule for immunization of school children has been formulated and a copy sent to each member of the State Medical Association. b) The South Dakota Health Department has been made aware of problems which result from failure of communications and has agreed to not institute any program relating to immunization of school children, issuance of immunization cards, etc., without first consulting the committee of the State Medical Association. c) Health examination forms from the colleges and universities of this state, as well as those from nursing training programs and other sources have been reviewed by the Committee. The Committee agrees that the health examination form used at the University of South Dakota covers the history, physical examination, immunizations, and necessary laboratory information, as adequately as any of the forms examined. However, because there is now in the process of development a standard college health examination form by the AMA, the Committee deferred any action upon a form for this state until the AMA form has become available. d) The Committee feels that a health examination form for elementary schools patterned after that now in use in the public schools of Sioux Falls has much merit. However, the form should have available space for information regarding visual acuity, hearing testing, hemoglobin, urinalysis, and possibly other additions relating to polio and measles immunizations. e) The Committee feels that the HIGH SCHOOL ATHLETIC EXAMINATION FORMS should be filled out by a physician who actually examines the applicants, and that standards be established as to the extent of the evaluation of the applicant. A history of diseases which might be affected detrimentally by athletics should be a part of the record as well as an indication of physical defects and any limitations which should be placed on the athlete.

This Committee makes the following recommendations:

a) A standard HEALTH EXAMINATION FORM for use in the elementary and high schools of the state, patterned after that now in use in the Sioux Falls public Schools with appropriate additions as noted above, should be recommended to the Public School systems of this state.

b) Health Standards should be established for the evaluation and certification by physicians of the state of persons participating in scholastic athletics.

The Reference Committee recommends the acceptance of this report with the following changes: Under Recommendations, Part (b) add the following: "as spelled out under section (e) of the above Committee report."

6) Committee on Hospital Utilization and Insurance Advisory Board

Two meetings were held by this Committee. Further business was carried out by correspondence. This Committee has the following recommendations:

a) Each hospital in the state should be encouraged to establish a UTILIZATION COMMITTEE for review of patient admissions at regular intervals, to direct attention to over utilization of hospital beds. There should also be a Committee of the South Dakota State Medical Association, for the same purpose.

b) An INSURANCE ADVISORY COMMITTEE should be established at a state level with regional

advisory committees on a local or district basis, to review controversial problems in insurance claims and review controversial fees in insurance claims. It is suggested by the Committee that the experience and possibly the service of the present Medical Advisory Committee for the South Dakota Blue Shield be utilized in the establishment of this Insurance Advisory Committee.

Other business conducted by this Commission during the past year:

1) Established contact with D. L. Kegaries, M.D., Rapid City, in relation to liaison between the Medical Association and the Hill-Burton Advisory Committee.

2) Investigated and made appropriate recommendations to the Council in regard to dispensing of optical supplies of the Ophthalmologists of the state.

3) Investigated and made recommendations to the Council in regard to the establishment of a Cleft-Lip and Cleft-Palate Clinic for the State of South Dakota.

4) Investigated and made suggestions to the Council in regard to the subject of negotiations between the AFL-CIO and the optometrists of the state for "Eye Care."

5) Recommended that each physician of this state receive information about the Medical School Endowment Fund and be given the opportunity to contribute to this most worthy enterprise.

6) Taking under advisement "Operation Head Start" dealing with the poverty program for children.

Respectfully submitted,
J. B. Gregg, M.D., Chairman

The Reference Committee recommends acceptance of this report with the following changes: Part (a) to read: Each hospital in the State should be encouraged to establish a UTILIZATION COMMITTEE for review of patient admissions and costs and ancillary facilities at regular intervals, to direct attention to over-utilization of hospital beds. Under (b) to read as follows: An INSURANCE ADVISORY COMMITTEE AND UTILIZATION COMMITTEE should be, etc.

REPORT OF THE COMMISSION ON LIAISON WITH ALLIED ORGANIZATIONS

The Commission held one general meeting in Huron, South Dakota, on April 11. The following subjects were discussed and recommendations made:

1. Nursing Services. It was felt that additional stimulus could be given to the recruitment of nurses at the local level.
2. Joint Commission for Improvement of the Care of the Patient. Marion Cosand, M.D., will accept appointment to this Commission. Dr. Walter Patt of Brookings will be asked to accept appointment to the commission. It was requested that local hospital committees on improvement of patient care submit minutes to the State Commission for their information and discussion of mutual problems. It was suggested that hospitals and local medical societies be informed that the State Commission would also welcome information on local problems and solutions reached so others could profit from such discussions.
3. Medical Legal Meeting. The next Medical Legal Meeting will be held in Rapid City in the fall of 1966. The Commission will meet with the Bar Association and local District Medical Society in the fall of 1965 to set the exact date and work out the program. Suggestions for topics for discussion were considered.
4. Pharmacy. Mail order drugs were discussed as to whether or not they are approved, controlled, and reliable. The Commission members were requested to obtain information on these questions and furnish it to the doctors in the State. The Commission also discussed dispensing drugs in the doctor's office and pharmacies in clinics.
5. Dr. Cosand attended the National Voluntary Health Conference in September, 1964. He reported on the conference. The commission suggested that each member of the commission and district medical society be furnished with a copy of the Directory of National Voluntary Health Organizations.
6. A general discussion of dental services in the state was held.
7. The Commission discussed the program of the AMA's Department of Medicine and Religion. It was suggested that the local district societies hold programs at their district meetings on this subject to acquaint the doctors and clergymen with it.

Respectfully submitted,
M. R. Cosand, M.D., Chairman
A. W. Spiry, M.D.
C. L. Swanson, M.D.
David Buchanan, M.D.
A. J. Tieszen, M.D.
V. V. Volin, M.D.
F. D. Gillis, M.D.
R. F. Thompson, M.D.
Dagfinn Lie, M.D.
Ted Hohm, M.D.
D. L. Ensberg, M.D.
Mary Sanders, M.D.

The Reference Committee recommends the acceptance of this report.

REPORT OF THE COMMISSION ON COMMUNICATIONS

A recommendation was made to the Council for a state-wide speakers bureau. It was suggested they have a list in the office of speakers and what subject they would prefer to talk on. These could be handled through the Secretary of each district and have a master list made.

Dick Erickson made a report to the Commission on the recent legislative petitions which were sent out earlier. 42,000 petitions were sent out and only 1.98% were returned.

Suggestions were made for continued discussion on continued educational programs on Health Care for the aged. The doctors should be informed of the various programs such as MAA and OAA. Some of this information is going into the doctors' offices, and still is unread. Communications should be accomplished at the district meetings. Maybe there could be one man on this commission from each District and let that man be a communications man from the district. The secretary should have a few minutes at each meeting to discuss any recent communication developments. The GRAB BAG was considered to be an excellent source of information. A suggestion was made to have a letter go to the office secretaries similar to the GRAB BAG.

A suggestion was made for having a field man and was delayed for future consideration, as at this time the budget is not adequate. The Public Relations Budget is $4,000, with postage and some public relations added, the budget is probably $10,000 for Communications.

A suggestion was made for having more committee meetings, and one would probably be held later in the fall.

It was suggested that the JOURNAL be filed and be used for future references. It would also be nice to have a portion of the JOURNAL carry a more detailed report on some of the articles from the GRAB BAG. Mr. Erickson suggested that over the next year the doctors on the Commission should give more detailed consideration to the JOURNAL and give him some constructive criticism.

REPORT ON THE JOURNAL: The JOURNAL was $2,200 in the red a year ago. At this time the JOURNAL is completely clear. Pharmaceutical Section was costing more to print than membership from the subscription sales made. Thus, it was eliminated. Since the JOURNAL is smaller now, we are considering using some of the articles from other state JOURNALS, upon their permission. Also, the National Advertising Bureau is in the process of setting up more pages for advertising. Mr. Erickson also had a talk with the printer and the printer agreed to decrease the cost of printing by $2.00 per page. Dr. Van Demark made a motion that Mr.

Richard C. Erickson be given a recommendation for outstanding work and assistance on the JOURNAL, and was seconded by Dr. Giebink.

It was also asked if it would be possible to get any of the speakers from the speakers bureau to write any article for the JOURNAL or maybe have some information on Stocks and Bonds, etc. Also, could doctors from South Dakota write articles on Medical Economics for publication.

Respectfully submitted,
C. L. Vogele, M.D., Chairman
R. E. Van Demark, M.D.
R. E. Dean, M.D.
Ted Wrage, M.D.
C. A. Johnson, M.D.
Hugo Andre, M.D.
R. R. Giebink, M.D.
B. F. King, M.D.
B. O. Lindbloom, M.D.
H. J. Grau, M.D.
L. K. Cowan, M.D.
H. H. Brauer, M.D.

The Reference Committee recommends the acceptance of this report with a hearty recommendation to establish a Speakers Bureau.

REPORT OF COMMISSION ON SCIENTIFIC MEDICINE

Three meetings have been held since the Commission was appointed. These were August 15, 1964, and January 10, 1965, in Sioux Falls and April 10, 1965, in Huron. In the areas of responsibility of the Commission, the following studies, recommendations or actions have been made:

1. **Mental Health and Mental Retardation:** The emphasis in mental health programs is gradually shifting to the local level. The Commission recommends the development of psychiatric units affiliated with community general hospitals to permit the utilization of administrative and auxiliary services of the hospitals. Patients would also be able to receive general medical care there. Community mental health clinics, serving both children and adults, should be operated as outpatient departments of general hospitals or independently. Mental health clinics or centers could also give assistance to or be established in conjunction with community-based facilities for the mentally retarded to avoid unnecessary duplication of certain facilities and personnel. A medical coordinator for mental health services is needed, as well as a professional coordinator for mental retardation programs.

   Dr. Richard B. Leander attended the AMA Second National Congress on Mental Illness and Health held in Chicago, November 5-7, 1964, devoted to "Community Mental Health Services and Resources — Mobilization and Orientation."

   At the direction of the Council, the Commission surveyed physicians to determine current practices for testing for phenylketonuria. It was concluded that a majority of physicians employ a test for phenylketonuria either in the hospital or in the office. There was no difficulty in obtaining such tests nor any lack of laboratory facilities in the state for performing them. The Commission recommends that presently available screening tests for PKU should not be made mandatory for all births in South Dakota. It does endorse the statement of the AMA Committee on Maternal Health and Child Care that " . . . voluntary cooperative programs among practicing physicians, hospitals and state health departments for testing for PKU should be encouraged and promoted."

   The Commission recommended that the medical association support pending legislation for the establishment of domestic relations court and for the control of chronic alcoholism.

   In February 1965, a questionaire originated by the Mental Health Section of the State Department of Health was mailed by the Association to physicians with the approval of the Commission. It is recommended that questionaires of this type be cleared by the appropriate commission and that the results be reviewed before being released.

   The Commission recommends that a Section be added to Chapter 13.19 Suicide — of the South Dakota Code of 1939 to provide that: (1) attempted suicides be reported to the county judge, (2) psychiatric evaluation of the individual involved be mandatory and that it be the duty of the judge to order such evaluation, (3) necessary treatment be ordered for the individual concerned. The matter is referred to the Commission on Legislation and Governmental Relations for implementation.

2. **Tuberculosis:** With respect to South Dakota's Tuberculosis Control and Treatment Law of 1963, a survey reveals that seventeen hospitals will accept active cases, seventeen arrested cases and twenty-eight hospitals will accept no cases. Fifty-eight physicians indicated interest in treating patients under the program. To implement the Law it is recommended that certain hospitals be designated initial evaluation and treatment centers where patients may have a treatment program begun and then be referred back to their family physician for continued care. The basic staff of these centers should include an internist, board certified or eligible, thoracic surgeon, radiologist, and pediatrician, board certified or eligible. On the basis of replies to the survey, Sioux Valley Hospital in Sioux Falls, Memorial Hospital in Watertown, and Sacred Heart Hospital in Yankton were designated centers. Care for patients in the Aberdeen and Rapid City areas should be handled elsewhere on a contractual basis until hospitals in those areas are able to accept them. A survey of laboratories revealed adequate facilities for diagnosis of tuberculosis. It was also recommended that a more satisfactory fee schedule related to care of these patients be developed.

3. **Heart Disease:** Dr. Bruce C. Lushbough attended the Second National Conference on Cardiovascular Diseases, November 22-24, 1964, in Washington. As a follow-up of this a Planning Committee for South Dakota was formed to implement the recommendations of the Conference. Dr. Lushbough is Chairman, with Dr. Gerald E. Tracy representing the South Dakota Heart Association and Alice B. Olson, R.N., representing the Department of Health. A $500 grant has been obtained from the Conference to secure a cardiovascular disease consultant to aid in promoting educational programs and in exploring needs for improved diagnostic and treatment facilities.

   A postgraduate program on "Basic Mechanisms of Heart Disease" was presented by the University of South Dakota School of Medicine at Vermillion, November 6 and 7, 1964.

   The President's Commission on Heart Disease, Cancer and Stroke has proposed a national program to conquer these diseases. The Commission will follow the development of this program and report on implications for the practice of medicine in South Dakota.

4. **Clinical Pathology:** The Fourth Annual Clinical Pathology Workshops, sponsored in part by the Medical Association, will take place at the University of South Dakota School of Medicine, May 6, 7, 8, 1965.

5. **Venereal Disease:** Dr. Clark F. Johnson attended the Venereal Disease Seminar in Denver, January 12-15, 1965, under auspices of the U.S. Public Health Service. Attention was called to the rising rate of syphilis and other venereal diseases. Poor reporting by physicians is hampering attempts to eradicate the diseases.

6. **Annual Scientific Meeting:** Suggestions for improving the format of the annual meeting are under review. The Commission also offers for consideration its own suggested plan for a two-

day scientific portion of the meeting:

First Day — Morning — Lectures by guest speakers, some invited by specialty societies.

First Day — Afternoon — Separate specialty society meetings with general attendance divided among them.

Second Day — Morning — Talks by South Dakota physicians. These and guest speakers could be intermixed on first and second mornings if more convenient.

Second Day — Afternoon — Symposium on a subject. Or, one or several short courses or workshops on specific topics, preferably with separate registration in advance.

The prize offered for late attendance should be discontinued. Program announcements, to be sent out early, should identify speakers, their positions and general content of their presentations.

Other areas of Commission responsibility did not present problems requiring specific action.

Respectfully submitted,
George W. Knabe, Jr., M.D., Chr.
Lawrence G. Behan, M.D.
Barbara Spears, M.D.
Bruce C. Lushbough, M.D.
Robert E. Nelson, M.D.
John T. Elston, M.D.
Eberhard H. Heinrichs, M.D.
Richard B. Leander, M.D.
Clark F. Johnson, M.D.
Noel deDianous, Jr., M.D.
Thomas E. Mead, M.D.
John H. Lloyd, Jr., M.D.

The Reference Committee recommends that this report be accepted along with the recommendations as set forth in the report. However, in regard to the implementation of the State's TB Program, the Committee recommends that the section establishing the basic staff of the proposed initial treatment centers be amended to read as follows: Board eligible or Board certified in general surgery, including some experience in thoracic surgery, or one who is qualified in the opinion of the Commission. The Committee further recommends that the State Medical Association, along with the Commission on Scientific Medicine, cooperate with the State Health Department in implementing South Dakota's Tuberculosis Control and Treatment Program.

REPORT OF THE COMMISSION ON INTERNAL AFFAIRS

The Commission Members all received copies of the Constitution and By-Laws of the State Medical Association and South Dakota Medical Service, Inc. They reviewed them and felt that no changes were necessary in January, 1965.

We all read a resolution of the 7th District Medical Society concerning our Annual Meetings, and a report of our opinions was given to the Council in January, 1965.

The Commission held a formal meeting in Huron on April 10th, 1965. Those present were Drs. Saul Friefeld, H. J. Stensrud, C. E. Tesar and D. L. Scheller.

Resolutions #3 and #4 were studied, and the Commission felt that Resolution #4 was a bit drastic. They were in favor of #3, but felt it should be carefully studied.

A discussion was held on future annual meetings, but no formal recommendations were made. It was decided to first evaluate our change-in-time schedule at the 1965 Annual Meeting.

After due consideration, the Commission recommends that orientation meetings for new physicians in South Dakota be held in the morning on the day of the Fall Council Meeting. It also recommends that the Councilor of each District should urge each new member of our Association to attend these meetings.

BENEVOLENT FUND REPORT
FROM APRIL 1, 1964, TO MARCH 1, 1965

Balance in bank April 1, 1964		$4,052.37
INCOME		
Loan Repayment	$550.00	
Interest	255.00	
Donations	736.00	
TOTAL INCOME		1,541.18
		$5,593.55
EXPENDITURES		
2 Loans	900.00	900.00
BALANCE IN BANK MARCH 1, 1965		$4,693.55
THE ASSETS OF THIS FUND ARE AS FOLLOWS:		
Government Bonds		$ 3,000.00
Loans (18)		7,550.00
Cash in Bank		4,693.55
		$15,243.55

OBITUARY RECORD REPORT

F. E. Boyd, M.D., Flandreau, deceased in July, 1964
Percy D. Peabody, Jr., M.D., Sisseton, deceased in October, 1964
C. J. Pinard, M.D., Gary, deceased in January, 1965
R. T. Maxwell, M.D., Clear Lake, deceased in February, 1965

The Sub-Committee on budget and audit of this Commission met at the office of the Executive Secretary on 1-9-65 and approved a budget for 1965-1966 which was submitted to the Council on 1-10-65.

BUILDING FUND — INCOME

	PROPOSED BUDGET 1965-1966	BUDGETED 1964-1965	FUNDS SPENT 1964-1965 11 Months Operation
Blue Shield Rent	$ 4,800.00	$ 4,800.00	$ 4,400.00
Assoc. Rent	3,000.00	2,400.00	2,200.00
Journal Rent	300.00	900.00	
Board of Examiners Rent	300.00	300.00	275.00
Nurses Assoc. Rent	900.00	900.00	825.00
OAA Rent	2,250.00	2,250.00	1,512.50
	$11,550.00	$11,550.00	$ 9,212.50
EXPENSES			
Janitor and Repairs	$ 1,900.00	$ 1,400.00	$ 2,238.73
Utilities	1,600.00	1,600.00	1,739.57
Interest	2,600.00	2,600.00	2,582.62
Repay. of Loans	2,450.00	2,450.00	2,101.33
Taxes and Insurance	2,000.00	2,000.00	204.32
Legal & Audit	1,000.00	1,500.00	3,045.92
	$11,550.00	$11,550.00	$11,912.49

The Chairman of this Commission attended all of the Council meetings this past year and submitted a report of all our meetings and correspondence to the Council.

D. L. Scheller, M.D.
Chairman
A. K. Myrabo, M.D.
A. P. Reding, M.D.
Jack Hagin, M.D.
Warren Peiper, M.D.
Lyle Freimark, M.D.
C. E. Tesar, M.D.
H. J. Stensrud, M.D.
Saul Friefeld, M.D.
C. L. Behrens, M.D.
Bill Hanson, M.D.
C. Rodney Stoltz, M.D.

Respectfully submitted,
D. L. Scheller, M.D., Chairman
Commission on Internal Affairs

The Reference Committee recommends the acceptance of this report.

REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

The Commission on Legislation and Governmental Relations has been divided into two sub-divisions:

Sub-Committee on Legislation

1. Robert H. Quinn, M.D., Chairman
2. R. J. Bareis, M.D.
3. Russell Orr, M.D.
4. W. H. Sweeny, M.D.
5. H. R. Wold, M.D.

Sub-Committee on Governmental Relations with the following sub-divisions:

1. Sub-Committee Chairman, Clifford Binder, M.D.
2. Veterans Administration, Bill Church, M.D.
3. Welfare Programs, R. J. Foley, M.D., and F. E. Kalda, M.D.
4. Civil Defense, James Reagan, M.D.
5. United States Public Health Service, W. J. Kilpatrick, M.D.

The Sub-Committee on Legislation met on January 9, 1965 at the Medical Association Office Building in Sioux Falls. The following topics:

1. Workmen's Compensation Problems
2. Suicide Law
3. Endorsement of Autopsy Law by the Medical Association
4. Law to Change Insanity Hearing Forms
5. MAA Law
6. Driver's Licensing Law
7. Hill-Burton Law
8. Endorsement of Bills being prepared by the Director of the Yankton State Hospital
9. National Legislation

The Legislative Committee recommended to the Council that the following bills be sponsored by the Association:

1. Concurrent Resolution asking for Legislative Research Council Study on Industrial Commissioners Office.
2. Bill Amending the Law concerning Insanity Hearing Forms.

The following bills were to be endorsed by the Association:

1. Workmen's Compensation Coverage Law
2. Autopsy Law
3. MAA Program Transfers
4. Driver's Licensing Law
5. Alcoholic Centers (bills presented by Dr. Behan)

The committee also recommend to the Council that:

1. The State Association recommend that Dr. D. L. Kegaries be reappointed to the Hill-Burton Advisory Committee and that three or four alternative nominations be submitted.
2. The matter of revision in the Suicide Law be deferred at the present time.
3. A proposed bill to be submitted by the Hospital Association to require that all coroners be medical doctors not be introduced at the present time.

A full Commission meeting has been scheduled and will be held on Saturday, April 10, at the Marvin Hughitt Hotel in Huron, South Dakota.

As Commission chairman, I attended the AMA's meeting in Chicago in December in regards to the AMA's policy on Health Care for the Aged. The Sub-Committee meeting on Medical Education was also attended in January of 1965.

A supplementary report will be issued following the April meeting in Huron, South Dakota.

ADDENDUM: To the Report of the Commission on Legislation and Governmental Relations:

A meeting of the full Commission on Legislation and Governmental Relations was held at the Marvin Hughitt Hotel in Huron, South Dakota, on April 10, 1965.

Considerable discussion was carried out in regards to the present national legislation concerning Health Care for the Aged (HR 6675). The Commission requested the Council of the South Dakota Medical Association to protest the inclusion of private practitioners in the Social Security Program. The legislation passed by the South Dakota Legislature in 1965 was discussed and a resume presented. It was noted at this time that all bills that were endorsed or sponsored by the South Dakota State Medical Association had been passed.

Trends in area wide planning were discussed and all physicians present felt that the members of the South Dakota Medical Association should be cognizant of the government's keen interest in this subject. It was requested that physicians noting an area wide planning group in their community should notify the South Dakota State Medical Association office.

The Commission requested that a ruling on the Driver's Licensing Law be obtained from the Attorney General's Office. The Commission recommended to the Council that the South Dakota Medical Association urge that all private practitioners service be kept out of the present Old Age Care Bill (HR 6675).

The Commission recommended that legislation be prepared along the lines of Indiana and California laws to protect officers of state organizations and/or staff officers from liability while performing duties as a member of that organization.

Further discussion was carried out in regards to Veterans Administration agreements. The unification of charges through the state concerning "county care cases" was discussed.

All actions of the Commission were sent to the Council Meeting of the South Dakota State Medical Association for their action.

Respectfully submitted,
R. H. Quinn, M.D., Chairman
W. T. Sweeny, M.D.
Russell Orr, M.D.
James Reagan, M.D.
W. R. J. Kilpatrick, M.D.
R. W. Honke, M.D.
R. J. Foley, M.D.
R. J. Bareis, M.D.
C. F. Binder, M.D.
H. R. Wold, M.D.
E. F. Kalda, M.D.
Bill Church, M.D.

The Reference Committee recommends the acceptance of this report. In addition, the Committee recommends that an attempt be made to set up a state-wide dollar co-efficient utilizing the Relative Value Study for payment of services rendered to county patients such as that used under the present MAA program. It is also recommended that the current AMA booklet dealing with disaster care be used as a guide line for local district medical society disaster care planning and that present plans be brought up to date.

REPORT OF THE GRIEVANCE COMMITTEE

The Grievance Committee considered a grievance filed by a physician against the medical staff of a hospital where he was unable to become a staff member. After much correspondence, as well as personal visits by a committee member with the hospital staff, the committee decided that we have no right to tell a hospital staff whom they must accept as a member. It has been well established in the law courts that it is the prerogative of the governing body of a hospital to select their own staff members. We suggested to the doctor that he try to resolve his difficulties with the staff and Board of Directors and to re-apply at a later date, and considered the matter to be closed.

We had a grievance filed by an out-of-state tourist who was treated by a specialist in a hospital in this State and who was much incensed at the charge that the specialist made. The Committee came to the conclusion that the complainant requested a specialist when he entered the hospital, and he was treated by a full-time specialist whose fees are a little higher than the average doctor. We also called his attention to the hospital records which showed that the doctor had to make extended visits on the first evening of the admission and had placed himself "on call" for the rest of his hospital stay in case any further trouble developed.

A grievance was filed by a district medical society against one of their members, but before submitting

it to the other members of the Grievance Committee, the chairman requested a local solution to the problem. At a District Meeting, the problem was solved and we consider this grievance closed.

We considered the grievance of a man, who was committed to a State Hospital, against the testifying psychiatrist. The Committee concluded that we would be unable to be in full possession of the facts of the case unless we had a complete transcript of the court proceedings which would be very costly to obtain. We further told the complainant that he had full protection of his rights while in court; that there was a presiding judge; and that he had also retained an attorney to look after his own interests.

There was another grievance filed by apparently some relative of a minor patient who complained about the end result of a fracture case. After a review of the hospital records in the case, the Committee came to the unanimous opinion that the doctor concerned did everything he possibly could in the treatment of the case and that he could be in no way held to blame for the end result.

In another case the patient also complained about the end result of a surgical procedure performed on her by a doctor in the State. After reviewing the case and the hospital records, the Committee came to the conclusion that surgery was indicated in her case and because of the nature of the patient's disease, it would be difficult to expect a good result. We further stated that we could not see how, in any way, the doctor could be blamed either for performing the operation or the end result.

Respectfully submitted,
C. J. McDonald, M.D.
R. A. Buchanan, M.D.
A. A. Lampert, M.D.
Magni Davidson, M.D.
R. H. Hayes, M.D.

The Reference Committee recommends the acceptance of this report.

FEE ADVISORY COMMITTEE REPORT

The Fee Advisory Committee has pursued its assignment of up-dating and improving the relative value study with three lengthy meetings during the past year. The rapidly changing and expanding practice of medicine and surgery necessitates changes and the inclusion of several new and additional procedures.

The Fee Advisory Committee has thought entirely in terms of relating the value of one medical or surgical procedure to another rather than to the establishment of any certain fee or dollar values for any given procedures. The committee attempted to evaluate the various procedures in terms of points relative to each other, particularly within a given branch or segment of medical or surgical practice rather than to compare the point values of the procedures in one branch of medicine with those of another. Different dollar co-efficients can readily be applied to the point value schedule for different income levels, thus maintaining the relative value.

All of the various specialty groups and societies in South Dakota gave the committee suggestions and recommendations which were considered and evaluated by the entire committee in arriving at the point values. Relative value studies from other states and Medical Associations were also studied, considered, and compared with those being discussed by our committee.

At the last meeting on December 12, 1964, after some sections of the relative value study had been approved by the committee, a review and comparison with the relative value studies from California was made and the committee decided to use the relative value study of California for all branches of medicine and surgery, rather than to substitute portions of it to our plan. Although many hours of study were devoted to establishing a relative value schedule, many more hours, thought, and experience had gone into the California study and the committee felt this was an improvement over what we had been able to develop.

The Fee Advisory Committee did not attempt and does not wish to establish any fee in any branch of medicine or surgery, but only attempted to arrive at a relative value in points of one procedure as compared with another. Since the meeting on December 12, at which time the California schedule was accepted by the committee, an additional study has been obtained from California dated August 8, 1964, at which time it was adopted by the Council of the California Medical Association. A copy of this schedule has been sent to every member of the committee and each member asked to either approve or disapprove of the new relative value study. All members of the committee except five, have approved of the revised 1964 California Relative Value Study.

The Committee therefore recommends to the House of Delegates of the South Dakota State Medical Association that the 1964 California relative value study be adopted, in total for use in South Dakota and that it replace the present South Dakota Relative Value Study of 1959.

Respectfully submitted,
Donald H. Breit, M.D., Chairman
Fee Advisory Committee

The Reference Committee recommends the acceptance of this report with the stipulation that the schedule of the College of American Pathologists as revised by the South Dakota Fee Advisory Committee be incorporated in the Pathology Section; that the schedule of the American Society of Internal Medicine as revised by the South Dakota Fee Advisory Committee be used as the Medical Section and that the coding and mechanics of affecting these changes be left to the Fee Advisory Committee to work out.

DISTINGUISHED SERVICE AWARDS

Started in 1951

1952—H. Russell Brown, M.D., Watertown
1953—Guy Van Demark, M.D., Sioux Falls (deceased)
1954—J. C. Ohlmacher, M.D., Vermillion (deceased)
1955—R. G. Mayer, M.D., Aberdeen (deceased)
1956—J. C. Ohlmacher, M.D., Vermillion (deceased)
1957—W. E. Donahoe, M.D., Sioux Falls
1958—Drs. J. C. Hagin, M. W. Pangburn (deseased), and James DeGeest, Miller
1958—J. F. Brenckle, M.D., Superior, Wisc. (deceased)
1958—Mrs. Agnes Holdridge, Madison
1959—Walter L. Hard, Ph.D., Vermillion
1959—Rev. and Mrs. Robert O. Bates, Sturgis
1959—R. M. Kilgard, M.D., Watertown (deceased)
1960—L. J. Pankow, M.D., Sioux Falls
1961—Gregg M. Evans, Ph.D., Custer
1962—Edwin Shaw, Ph.D., Vermillion
1963—Arthur A. Lampert, M.D., Rapid City
1964—John C. Foster, Phoenix, Ariz.
1965—A. P. Reding, M.D., Marion

FIFTY YEAR CLUB MEMBERS

C. V. Auld, M.D., Plankinton
Myrtle Carney, M.D., Ft. Worth, Texas
J. C. Clark, M.D., Sioux Falls (deceased)
F. L. Class, M.D., Huron (deceased)
M. E. Cogswell, M.D., Wolsey (deceased)
J. Cook, M.D., Bonesteel (deceased)
Harold L. Crane, M.D., Avon, Conn.
S. A. Donahoe, M.D., Sioux Falls
W. E. Donahoe, M.D., Sioux Falls
V. W. Embree, M.D., Pierre
W. D. Farrell, M.D., Aberdeen (deceased)
R. B. Fleeger, M.D., Lead
R. R. Fisk, M.D., Flandreau (deceased)
F. W. Freyberg, M.D., Mitchell
E. E. Gage, M.D., Sioux Falls (deceased)
E. H. Grove, M.D., Arlington (deceased)
Lyle Hare, M.D., Spearfish
J. A. Hohf, M.D., Yankton (deceased)
F. S. Howe, M.D., Deadwood (deceased)
A. H. Hoyne, M.D., Salem (deceased)
A. S. Jackson, M.D., Rapid City
R. J. Jackson, M.D., Hot Springs (deceased)
J. A. Jacotel, M.D., Milbank (deceased)
G. T. Jordan, M.D., Vermillion (deceased)
F. F. Keene, M.D., Wessington Springs (deceased)
B. C. Murdy, M.D., Aberdeen
N. T. Owen, M.D., Rapid City (deceased)
L. L. Parke, M.D., Canton
M. O. Pemberton, M.D., Deadwood
R. J. Quinn, M.D., Sioux Falls
T. B. Ranney, M.D., Aberdeen (deceased)
T. F. Riggs, M.D., Pierre (deceased)
H. L. Saylor, M.D., Huron (deceased)
F. W. Valkenaar, M.D., Chancellor
G. E. Van Demark, M.D., Sioux Falls (deceased)
H. P. Volin, M.D., Lennox
C. H. Weishaar, M.D., Huron (deceased)
J. R. Westaby, M.D., Madison
G. E. Zimmerman, M.D., Missoula, Montana

COMMUNITY SERVICE AWARD

1961—R. A. Buchanan, M.D., Huron
1962—Roland F. Hubner, M.D., Yankton
1963—George W. Mills, M.D., Wall
1964—John C. Hagin, M.D., Miller
1965—Alonzo P. Peeke, M.D., Volga

SOUTH DAKOTA OB-GYN SOCIETY

Sioux Falls
August 21, 1965
HOLIDAY INN

PROGRAM

10:00	Coffee and Registration	
10:30	Should the Law Relating to Therapeutic Abortion be Changed in South Dakota?	Ben Munson, M.D.
10:45	Use of Intra-amionic Saline for Induction Labor (Case presentation)	Roscoe Dean, M.D.
11:00	To be announced. (Case presentation)	John Slingsby, M.D.
11:15	The Chemotherapy of Choriocarcinoma (Case presentation)	Fred Stahmann, M.D.
	BUFFET LUNCH — HOLIDAY INN	
1:00	Abnormalities of Sexual Development, A Guide for the Clinician	Warren H. Pearce, M.D. Chairman Dept. OB-GYN U. of Nebraska
1:45	Discussion	W. Hard, Ph.D. Dean School of Medicine U. of South Dakota
2:00	Technique and Clinical Value of Amnionycentesis	M. Mutch, M.D.
2:30	Technique for Para-cervical Block	Brooks Ranney, M.D.
3:00	OPEN PANEL FOR OB - GYN PROBLEM CASES W. Pearce, M.D. F. Stahmann, M.D. R. Stoltz, M.D. E. Hanisch, M.D. Please bring your medical problems and see what the experts have to say!	

South Dakota State Medical Association Roster — 1965
Membership by Districts

ABERDEEN
DISTRICT No. 1

Pres., Carson Murdy, M.D.
Sec., William Taylor, M.D.

*Alway, J. D. ..... Arizona
Avotins, R. ..... Faulkton
Berzins, R. ..... Bowdle
Bloemendaal, G. J. ..... Ipswich
Bormes, R. E. ..... Aberdeen
Bormes, W. E. ..... Aberdeen
Bunker, P. G. ..... Aberdeen
Calene, J. L. ..... Aberdeen
Currie, K. P. ..... Britton
Damm, W. P. ..... Redfield
deDianous, N., Jr. ..... Aberdeen
Destache, Donald ..... Aberdeen
Driver, I. ..... Aberdeen
Eckrich, J. A. ..... Aberdeen
Fahrenwald, M. ..... Redfield
Gerber, B. C. ..... Aberdeen
Graff, L. W. ..... Britton
Hagan, A. S. ..... Faulkton
Hovland, James I. ..... Aberdeen
Janusz, A. J. ..... Aberdeen
Keegan, Agnes ..... Aberdeen
King, B. F. ..... Aberdeen
Kosse, Karl ..... Aberdeen
Kryger, Peter ..... Groton
Leon, Paul ..... Aberdeen
Murdy, B. C. ..... Aberdeen
Murdy, C. B. ..... Aberdeen
McCarthy, P. V. ..... Aberdeen
McIntosh, G. F. ..... Eureka
Norgello, V. ..... Redfield
Patterson, D. ..... Redfield
Perry, E. J. ..... Redfield
Pfisterer, T. R. ..... Redfield
Rodine, J. C. ..... Aberdeen
Rudolph, E. A. ..... Aberdeen
Sanders, M. E. ..... Redfield
Scheffel, A. ..... Redfield
Seaman, David ..... Aberdeen
Shousha, Albert ..... Hoven
Spicer, E. R. P. ..... Aberdeen
Standard, R. A. ..... Aberdeen
Steele, G. H. ..... Aberdeen
Sweeny, W. T. ..... Aberdeen
Taylor, Wm. R. ..... Aberdeen
Vogele, A. C. ..... Aberdeen
Vogele, C. L. ..... Aberdeen
Zvejnieks, K. ..... Leola

WATERTOWN
DISTRICT No. 2

Pres., T. J. Wrage, Jr., M.D.
Sec., E. H. Heinrichs, M.D.

Allen, S. ..... Watertown
Argabrite, J. W. ..... Watertown
Auskaps, R. ..... Watertown
Bartron, G. Robert ..... Watertown
Bartron, H. J., Jr. ..... Watertown
Brakss, V. ..... Watertown
Brevik, A. K. ..... Watertown
Brewster, C. B. ..... Watertown
Brown, H. Russell ..... Watertown
Clark, C. J. ..... Watertown
Fedt, D. ..... Watertown
Gysin, M. W. ..... Watertown
Heinrichs, E. H. ..... Watertown
Huppler, E. G. ..... Watertown
Magtibay, M. ..... Bryant
Nelson, P. S. ..... Watertown
Reul, T. ..... Watertown
Rousseau, M. C. ..... Watertown
Ryan, C. ..... Watertown
Stoltz, C. R. ..... Watertown
Stransky, J. J. ..... Watertown
Tracy, G. E. ..... Watertown
Willen, A. ..... Clark
Wrage, T. J., Jr. ..... Watertown

MADISON-BROOKINGS
DISTRICT No. 3

Pres., Bruce Lushbough, M.D.
Sec., C. M. Kershner, M.D.

Anderson, J. A. ..... Madison
Arbon, R. K. ..... Lake Preston
Belatti, R. G. ..... Madison
Benjamin, M. B. ..... Mich.
Davidson, M. ..... Brookings
Friefeld, S. ..... Brookings
Henry, Robert ..... Brookings
Hura, R. ..... Howard
Kershner, C. M. ..... Brookings
Klar, W. ..... Flandreau
Lushbough, B. C. ..... Brookings
Marr, Liselotte ..... Estelline
Marr, Valentine ..... Estelline
Muggly, J. A. ..... Madison
Otey, B. T. ..... Flandreau
Patt, W. H. ..... Brookings
Peeke, A. P. ..... Volga
Plowman, E. T. ..... Brookings
Reagan, J. L. ..... Madison
Roberts, C. S., Jr. ..... Brookings
Scheller, D. L. ..... Arlington
Shaskey, R. E. ..... Brookings
*Sherwood, C. E. ..... Madison
Stensrud, H. J. ..... Madison
Tank, M. ..... Brookings
Turner, C. R. ..... Brookings
Watson, E. S. ..... Brookings
Westaby, J. R. ..... Madison
Whitson, G. E. ..... Madison
Wold, H. R. ..... Madison

PIERRE
DISTRICT No. 4

Pres., R. J. Zakahi, M.D.
Sec., J. T. Cowan, M.D.

Askwig, L. C. ..... Pierre
Collins, E. H. ..... Gettysburg
Cowan, J. T. ..... Pierre
Fox, S. W. ..... Pierre
Horthy, A. ..... Kennebec
Horthy, K. ..... Kennebec
Illig, K. M. ..... Pierre
Jahraus, R. C. ..... Pierre
Lindbloom, B. O. ..... Pierre
Morrissey, M. M. ..... Pierre
Murphy, J. C. ..... Murdo
Simon, S. ..... Pierre
Spears, B. ..... Pierre
Sundet, N. J. ..... Kadoka
Swanson, C. L. ..... Pierre
Tieszen, A. J. ..... Pierre
Urbanyi, E. W. ..... Gettysburg
Van Heuvelen, G. J. ..... Pierre
Werthman, H. E. ..... Pierre
Westland, G. I. ..... Onida
Zakahi, R. J. ..... Pierre

HURON
DISTRICT No. 5

Pres., David Buchanan, M.D.
Sec., G. M. Huet, M.D.

Adams, H. P. ..... Huron
Avots-Avotins, K. ..... Texas
Bell, G. Robert ..... De Smet
Buchanan, D. ..... Huron
Buchanan, R. A. ..... Huron
Charbonneau, Y. ..... Huron
Dean, Roscoe ..... Wess. Springs
DeGeest, J. H. ..... Miller
Gryte, C. F. ..... Huron
Hagin, J. C. ..... Miller
Hanisch, E. C., Jr. ..... Huron
Hanson, Wm. O. ..... Huron
Hines, Thomas ..... Miller
Hofer, E. A. ..... Huron
Hohm, P. ..... Huron
Hohm, T. ..... Huron
Huet, G. M. ..... Huron
Kilpatrick, W. R. J. ..... Huron
Lardinois, C. C. ..... Huron
Leigh, F. D. ..... Huron
Lenz, B. T. ..... Huron
McManus, T. B. ..... Wess. Springs
Mendoza, Carlos ..... Huron
Odland, W. B. ..... Huron
Orgusaar, R. ..... Florida
Saxton, W. H. ..... Huron
Saylor, H. L., Jr. ..... Huron
Tschetter, P. S. ..... Huron

MITCHELL
DISTRICT No. 6

Pres., B. Skogmo, M.D.
Sec., L. W. Tobin, M.D.

*Auld, C. V. ..... Plankinton
Berry, J. T. ..... Mitchell
Binder, C. F. ..... Chamberlain
Brogdon, P. P. ..... Mitchell
Delaney, Robert ..... Mitchell
Delaney, W. A., Jr. ..... Mitchell
Fritz, W. H. ..... Mitchell
Gere, R. G. ..... Mitchell
Gillis, F. D. ..... Mitchell
Hockett, R. D. ..... Mitchell
Holland, L. W. ..... Chamberlain
Lewis, H. R. ..... Mitchell
Lloyd, J. H. ..... Mitchell
Mabee, D. R. ..... Mitchell
Mabee, J. O. ..... Mitchell
Mabee, O. J. ..... Mitchell
McCann, J. P. ..... Parkston
Monson, C. D. ..... Parkston
Mueller, E. H. ..... Tripp
Peiper, W. A. ..... Mitchell
Porter, M. H. ..... Parkston
Skogmo, B. R. ..... Mitchell
Tobin, F. J. ..... Mitchell
Tobin, L. W. ..... Mitchell
Vonburg, V. R. ..... Mitchell
Vose, J. L. ..... Mitchell
Weatherill, D. W. ..... Mitchell
Weber, R. A. ..... Mitchell

SIOUX FALLS
DISTRICT No. 7

Pres., E. W. Sanderson, M.D.
Sec., B. J. Begley, M.D.
Treas., D. L. Ensberg, M.D.

Akland, L. ..... Sioux Falls
Amundson, Loren ..... Sioux Falls
Anderson, C. ..... Sioux Falls
Anderson, T. R. ..... Sioux Falls
Anderson, W. R. ..... Sioux Falls
Angelos, T. ..... Canton
Arneson, W. A. ..... Sioux Falls
Aspaas, P. K. ..... Dell Rapids
Barnett, G. L. ..... Sioux Falls
Becker, S. ..... Sioux Falls
Begley, B. J. ..... Sioux Falls
Billion, T. J., Jr. ..... Sioux Falls
Black, Max ..... Canistota
Bloemendaal, Robert Sioux Falls
Bostian, Leroy ..... Sioux Falls
Breit, D. H. ..... Sioux Falls
Brzica, S. M. ..... Sioux Falls
Burleigh, J. ..... Sioux Falls
Burns, E. A. ..... Sioux Falls
Burns, K. R. ..... Sioux Falls
*Carney, M. ..... Texas
Chalmers, J. H. ..... Sioux Falls
Church, W. G. ..... Sioux Falls
Cottam, G. I. W. ..... Sioux Falls
Cutshall, V. H. ..... Sioux Falls
Cutshall, V. K. ..... Sioux Falls
Davidson, H. E. ..... Sioux Falls
de Almeida, M. J. ..... Viborg
de Boer, A. ..... Minnesota
de Marco, Lynn ..... Sioux Falls
Devick, J. C. ..... Colton
Donahoe, J. W. ..... Sioux Falls
Donahoe, R. R. ..... Sioux Falls
*Donahoe, S. A. ..... Sioux Falls
*Donahoe, W. E. ..... Sioux Falls
Driver, D. R. ..... Sioux Falls
Duimstra, Fred ..... Sioux Falls
Eirinberg, I. ..... Sioux Falls
Ensberg, D. ..... Sioux Falls
Epp, D. ..... Freeman
Ericksen, E. G. ..... Sioux Falls
Faber, Donald ..... Sioux Falls
Farrell, H. W. ..... Sioux Falls
Ferrell, M. R. ..... Sioux Falls
Fisk, R. G. ..... Dell Rapids
Frost, D. M. ..... Sioux Falls
Gensler, Thomas ..... Canton
Giebink, R. R. ..... Sioux Falls
*Green, R. D. ..... Sioux Falls
Greenfield, D. ..... Sioux Falls
Greenfield, R. E. ..... Sioux Falls
Greenough, E. E. ..... Sioux Falls
Gregg, J. B. ..... Sioux Falls
Gross, H. Phil ..... Sioux Falls
Grove, M. S. ..... Sioux Falls
Hage, W. ..... Sioux Falls
Hansen, H. F. ..... Sioux Falls
Hosen, R. S. ..... Sioux Falls
Hoskins, J. H. ..... Sioux Falls
Ihle, C. W. ..... Sioux Falls
Jameson, G. M. ..... Sioux Falls
Janis, J. B. ..... Sioux Falls
Jones, W. L. ..... Sioux Falls
Kahler, Stephen ..... Sioux Falls
Kaufman, I. I. ..... Freeman
Kaul, Lothar ..... Sioux Falls
*Keller, S. A. ..... California
Kemper, C. E. ..... Viborg
King, L. M. ..... Sioux Falls
Kittelson, H. O. ..... Sioux Falls
Knowles, R. C. ..... Sioux Falls
Kohlmeyer, F. C. ..... Sioux Falls
Larson, C. S. ..... Sioux Falls
Leander, R. B. ..... Sioux Falls
Leraan, L. G. ..... Sioux Falls
Lietzke, E. T. ..... Beresford
Manning, D. H. ..... Sioux Falls
Maresh, E. R. ..... Sioux Falls
Mattice, Lloyd ..... Sioux Falls
Moller, C. ..... Dell Rapids
Mongeon, C. J. ..... Calif.
Mutch, M. J. ..... Sioux Falls
McDonald, C. J. ..... Sioux Falls
McGreevy, E. J. ..... Sioux Falls
McGreevy, J. V. ..... Sioux Falls
McHardy, B. R. ..... Sioux Falls
*Nelson, J. A. ..... California
Nelson, R. E. ..... Sioux Falls
Ogborn, R. J. ..... Sioux Falls
Olson, R. G. ..... Sioux Falls
Opheim, W. L. ..... Sioux Falls
Orr, R. T. ..... Sioux Falls
Ortmeier, Denny ..... Sioux Falls
*Pankow, L. J. ..... Sioux Falls
*Parke, L. L. ..... Canton
Pasek, E. A. ..... Sioux Falls
Peik, D. J. ..... Sioux Falls
Peters, E. H. ..... Sioux Falls
Petres, A. ..... Salem
Quinn, R. H. ..... Sioux Falls
*Quinn, R. J. ..... Sioux Falls
Reagan, P. R. ..... Sioux Falls
Sanderson, E. W. ..... Sioux Falls
Sercl, W. ..... Sioux Falls
Shaeffer, J. H. ..... Sioux Falls
Shreves, H. ..... Sioux Falls
Smith, G. W. ..... Sioux Falls
Stahmann, F. ..... Sioux Falls
Steiner, P. K. ..... Sioux Falls
Stern, C. A. ..... Sioux Falls
Strauss, B. ..... Beresford
Tuohy, Gerald F. ..... Sioux Falls
Van Demark, R. E. ..... Sioux Falls
Van Lier, P. C. ..... Sioux Falls
Villa, Jose ..... Freeman
*Volin, H. P. ..... Lennox
Volin, V. V. ..... Sioux Falls
Votaw, F. ..... Sioux Falls
Weaver, R. J. ..... Sioux Falls
Wegner, K. H. ..... Sioux Falls
Wessman, N. E. ..... Sioux Falls
Williams, D. B. ..... Sioux Falls
Williams, M. F. ..... Sioux Falls
Zandersons, V. ..... Parker
*Zimmerman, Goldie E. Missoula, Montana

YANKTON
DISTRICT No. 8

Pres., R. F. Thompson, M.D.
Sec., G. Knabe, Jr., M.D.
Treas., N. B. Saoi, M.D.

Abts, F. J. ..... Yankton
Andre, H. C. ..... Vermillion
Auld, Marian ..... Yankton
Auld, M. A. ..... Yankton
Behan, Lawrence ..... Yankton
Berg, S. ..... Scotland
Cline, D. W. ..... Yankton
Domina, Alan A. ..... Tyndall
Eyres, T. E. ..... Vermillion
Fairbanks, W. H. ..... Vermillion
Faithe, Margaret ..... Wakonda
Foley, R. J. ..... Tyndall
Glood, D. ..... Viborg
Grover, W. W. ..... Bondeul, Wisc.
Haas, F. W. ..... Yankton
Hendeles, Frieda ..... Yankton
*Hill, J. F. ..... Yankton
Honke, R. W. ..... Wagner
Hubner, R. F. ..... Yankton
Johnson, C. F. ..... Yankton
Kalda, E. F. ..... Platte
Kleinsasser, G. ..... Scotland
Knabe, G. W. ..... Vermillion
Kramer, R. K. ..... Yankton
Lyso, M. ..... Yankton
McVay, C. B. ..... Yankton
Moore, E. J. ..... Vermillion
Nelson, Earl ..... Lake Andes
Nordmo, S. H. ..... Vermillion
Porter, Richard I. ..... Yankton
Price, Ronald ..... Armour
Ranney, B. ..... Yankton
Reade, D. M. ..... Yankton
Reaney, D. B. ..... Yankton
Reding, A. P. ..... Marion
Riesberg, E. ..... Yankton
Saoi, N. B. ..... Yankton
Sattler, T. H. ..... Yankton
Savage, L. ..... Yankton
Sebring, F. U. ..... Vermillion
Stanage, W. F. ..... Yankton
Steele, J. P. ..... Yankton
Thompson, R. F. ..... Yankton
Tidd, J. T. ..... Yankton
Willcockson, T. H. ..... Yankton

BLACK HILLS
DISTRICT No. 9

Pres., Gordon Paulson, M.D.
Sec., John Hewitt, M.D.

Anderson, A. B. ..... Lead
Angelos, G. ..... Hot Springs
Bailey, J. D. ..... Rapid City
Bareis, R. J. ..... Rapid City
Barrett, A. J. ..... Rapid City
Behrens, C. L. ..... Rapid City
Blunck, C. J. ..... Rapid City
Bobeck, C. J. ..... Rapid City
Borgmeyer, H. J. ..... Rapid City
Boyce, R. A. ..... Rapid City
Bray, R. B. ..... Rapid City
Butler, J. M. ..... Hot Springs
Cameron, D. E. ..... Rapid City
Carson, L. E. ..... Lead
*Chassell, J. L. ..... Belle Fourche
Chu, C. L. ..... Florida
Clark, B. S. ..... Spearfish
Clark, C. A. ..... Lead
Cline, J. A. ..... Rapid City
Cowan, L. K. ..... Rapid City
*Crane, H. L. ..... Avon, Conn.
Crowder, R. ..... Rapid City
D'Arata, E. J. ..... New Underwood
Davis, J. H. ..... Belle Fourche
Dulaney, C. H. ..... Ft. Meade
Dzintars, P. F. ..... Faith
Elston, J. T. ..... Rapid City
Feehan, J. J. ..... Rapid City
Finley, R. C. ..... Rapid City
*Fleeger, R. R. ..... Lead
Freimark, L. G. ..... Rapid City
Frost, H. L. ..... Rapid City
Geib, W. A. ..... Rapid City
Gilbert, F. J. ..... Belle Fourche
Grau, H. J. ..... Rapid City
Grundy, Betty L. ..... Lead
Gwinn, C. B. ..... Rapid City
Hamm, J. N. ..... Sturgis
Hare, H. J. ..... Rapid City
*Hare, Lyle ..... Spearfish
Haugan, H. O. ..... Rapid City
Hewitt, J. M. ..... Rapid City
Holleman, W. W. ..... Rapid City
Hvam, Ole ..... Quinn
*Jackson, A. S. ..... Rapid City
Jacobson, T. R. ..... Hot Springs
Janss, William ..... Rapid City
Jatoi, A. M. ..... Deadwood
Johnson, Robert K. ..... Rapid City
Jones, R. S. ..... Rapid City
Jones, W. E. ..... Sturgis
Kegaries, D. L. ..... Rapid City
Koren, P. H. ..... Rapid City
Kovarik, R. A. ..... Rapid City
Kovarik, W. J. ..... Rapid City
Kwan, F. P. ..... Rapid City
Lampert, A. A. ..... Rapid City
Leeds, J. F. ..... Rapid City
Lydiatt, J. ..... Hot Springs
Lynn, R. J. ..... Edgemont
MacDonough, H. J. Hot Springs
Mangulis, G. ..... Philip
Marousek, M. ..... Belle Fourche
Mattox, J. E. ..... Deadwood
McCroskey, R. C. ..... Rapid City
Mead, T. ..... Spearfish
Merryman, M. P. ..... Rapid City
Meyer, W. L. ..... Hot Springs
Millea, R. P. ..... Rapid City
*Mills, G. W. ..... Wall
*O'Toole, T. F. ..... Rapid City
Owen, G. S. ..... Rapid City
Palmerton, E. S. ..... Rapid City
Paulson, G. ..... Rapid City
*Pemberton, M. O. ..... Deadwood
Pokorny, J. F. ..... Newell
*Radusch, F. J. ..... Rapid City
Read, Leland ..... Edgemont
Roman, T. P. ..... Martin
Roper, C. E. ..... Hot Springs
Ruud, E. T. ..... Rapid City
Salladay, I. R. ..... Ft. Meade
Saxton, A. J. ..... Kansas
Semones, A., Jr. ..... Lead
Sherrill, S. F. ..... Belle Fourche
Slingsby, J. B. ..... Rapid City
Smiley, J. C. ..... Deadwood
Spain, M. L. ..... Rapid City
Swisher, L. P. ..... Kadoka
Tesar, C. E. ..... Rapid City
Theissen, H. H. ..... Rapid City
Westaby, R. S., Jr. ..... Rapid City
Whitney, N. R. ..... Rapid City
Williams, F. R. ..... Rapid City
Wood, G. F. ..... Rapid City
Yackley, J. V. ..... Rapid City
Zanka, J. A. ..... Rapid City

ROSEBUD
DISTRICT No. 10

Pres., M. R. Cosand, M.D.
Sec., R. H. Hayes, M.D.

Cosand, M. R. ..... Winner
Hayes, R. H. ..... Winner
Lakstigala, Peter ..... White River
Monfore, James ..... Winner
Nemer, R. G. ..... Gregory
Staats, R. E. (M.S.) ..... New York
Studenberg, D. ..... Gregory
Studenberg, J. E. ..... Winner
Sweet, E. P. ..... Burke
Vogelgesang, L. C. ..... Gregory

NORTHWEST
DISTRICT No. 11

Sec., B. P. Nolan, M.D.

Gunc, Bedrettin ..... Herreid
Johnson, C. A. ..... Lemmon
Linde, Leonard ..... Mobridge
Lowe, Harold ..... Mobridge
Nolan, B. P. ..... Mobridge
Sabbagh, M. ..... McLaughlin
Spiry, A. W. ..... Mobridge
Torkildson, G. ..... McLaughlin
Totten, F. C. ..... Lemmon

WHETSTONE VALLEY
DISTRICT No. 12

Pres., Joseph Kass, M.D.
Sec., Ruth Czajkowskyj, M.D.

Batt, E. J. ..... Sisseton
Brauer, H. H. ..... Sisseton
Brinkman, W. C. ..... Sisseton
Czajkowskj, R. ..... Veblen
Czajkowskj, T. ..... Veblen
Gregory, D. A. ..... Milbank
Janavs, V. ..... Milbank
Johnson, E. A. ..... Milbank
Judge, W. T. ..... Milbank
Kass, Joseph ..... Rosholt
Karlins, W. H. ..... Webster
Keller, L. W. ..... Webster
Lie, Dagfinn ..... Webster
Lovering, J. ..... Sisseton

M.S.—Indicates Military Service

*—Indicates Honorary Membership

South Dakota State Medical Association Roster — 1965

Membership — Alphabetical Listing

Abts, F. J. ..... Yankton
Adams, H. P. ..... Huron
Akland, L. ..... Sioux Falls
Allen, S. W. ..... Watertown
*Alway, J. D. ..... Arizona
Amundson, Loren ..... Sioux Falls
Anderson, A. B. ..... Lead
Anderson, C. Wm. ..... Sioux Falls
Anderson, J. A. ..... Madison
Anderson, T. R. ..... Sioux Falls
Anderson, W. R. ..... Sioux Falls
Andre, H. C. ..... Vermillion
Angelos, G. ..... Hot Springs
Angelos, T. ..... Canton
Arbon, R. K. ..... Lake Preston
Argabrite, J. W. ..... Watertown
Arneson, W. A. ..... Sioux Falls
Askwig, L. C. ..... Pierre
Aspaas, P. K. ..... Dell Rapids
*Auld, C. V. ..... Plankinton
Auld, Marian ..... Yankton
Auld, M. A. ..... Yankton
Auskaps, R. ..... Watertown
Avots-Avotins, K. ..... Texas
Avotins, R. ..... Faulkton
Bailey, J. D. ..... Rapid City
Bareis, R. J. ..... Rapid City
Barnett, G. L. ..... Sioux Falls
Barrett, A. J. ..... Rapid City
Bartron, G. R. ..... Watertown
Bartron, H. J., Jr. ..... Watertown
Batt, E. J. ..... Sisseton
Becker, S. F. ..... Sioux Falls
Begley, B. J. ..... Sioux Falls
Behan, L. G. ..... Yankton
Behrens, C. L. ..... Rapid City
Belatti, R. G. ..... Madison
Bell, G. Robert ..... De Smet
Benjamin, M. B. ..... Michigan
Berg, S. ..... Scotland
Berry, J. T. ..... Mitchell
Berzins, R. ..... Bowdle
Billion, T. J., Jr. ..... Sioux Falls
Binder, C. F. ..... Chamberlain
Black, Max ..... Canistota
Bloemendaal, G. J. ..... Ipswich
Bloemendaal, Robert ..... Sioux Falls
Blunck, C. F. ..... Rapid City
Bobeck, C. J. ..... Rapid City
Borgmeyer, H. J. ..... Rapid City
Bormes, R. E. ..... Aberdeen
Bormes, W. E. ..... Aberdeen
Bostian, Leroy ..... Sioux Falls
Boyce, R. A. ..... Rapid City
Brakss, V. ..... Watertown
Brauer, H. H. ..... Sisseton
Bray, R. B. ..... Rapid City
Breit, D. H. ..... Sioux Falls
Brevik, A. K. ..... Watertown
Brewster, C. B. ..... Watertown
Brinkman, W. C. ..... Sisseton
Brzica, S. M. ..... Sioux Falls
Brogdon, P. P. ..... Mitchell
Brown, H. R. ..... Watertown
Buchanan, D. ..... Huron
Buchanan, R. A. ..... Huron
Bunker, P. G. ..... Aberdeen
Burleigh, J. ..... Sioux Falls
Burns, E. A. ..... Sioux Falls
Burns, K. R. ..... Sioux Falls
Butler, J. M. ..... Hot Springs
Calene, J. L. ..... Aberdeen
Cameron, D. E. ..... Rapid City
*Carney, M. ..... Ft. Worth, Texas
Carson, L. E. ..... Lead
Chalmers, J. H. ..... Sioux Falls
Charbonneau, Y. H. ..... Huron
*Chassell, J. L. ..... Belle Fourche
Chu, C. L. ..... Alabama
Church, Bill G. ..... Sioux Falls
Clark, B. S. ..... Spearfish
Clark, C. A. ..... Lead
Clark, C. J. ..... Watertown
Cline, J. A. ..... Rapid City
Collins, E. H. ..... Gettysburg
Cosand, M. R. ..... Winner
Cottam, G. I. W. ..... Sioux Falls
Cowan, J. T. ..... Pierre
Cowan, L. K. ..... Rapid City
*Crane, H. L. ..... Connecticut
Crowder, R. B. ..... Rapid City
Currie, K. P. ..... Britton
Cutshall, V. H. ..... Sioux Falls
Cutshall, V. K. ..... Sioux Falls
Czajkowskyj, Ruth ..... Veblen
Czajkowskyj, T. ..... Veblen
D'Arata, E. J. ..... New Underwood
Damm, W. P. ..... Redfield
Davidson, H. E. ..... Sioux Falls
Davidson, M. ..... Brookings
Dean, Roscoe ..... Wess. Springs
de Almeida, M. J. ..... Viborg
de Boer, A. ..... Minnesota
deDianous, N., Jr. ..... Aberdeen
De Geest, J. H. ..... Miller
Delaney, R. J. ..... Mitchell
Delaney, W. A., Jr. ..... Mitchell
de Marco, Lynn ..... Sioux Falls
Destache, Donald ..... Aberdeen
Devick, J. S. ..... Colton
Domina, Alan ..... Tyndall
Donahoe, J. W. ..... Sioux Falls
Donahoe, R. R. ..... Sioux Falls
*Donahoe, S. A. ..... Sioux Falls
*Donahoe, W. E. ..... Sioux Falls
Driver, D. R. ..... Sioux Falls
Driver, I. E. ..... Aberdeen
Duimstra, Fred ..... Sioux Falls
Dulaney, C. H. ..... Ft. Meade
Dzintars, P. F. ..... Rapid City
Eckrich, J. A. ..... Aberdeen
Eirinberg, I. ..... Sioux Falls
Elston, J. T. ..... Rapid City
Ensberg, D. L. ..... Sioux Falls
Epp, D. L. ..... Freeman
Ericksen, E. G. ..... Sioux Falls
Eyres, T. E. ..... Vermillion
Faber, Donald ..... Sioux Falls
Fahrenwald, M. ..... Redfield
Fairbanks, W. H. ..... Vermillion
Faithe, Margaret ..... Wakonda
Farrell, H. W. ..... Sioux Falls
Fedt, Donald ..... Watertown
Feehan, J. J. ..... Rapid City
Ferrell, M. R. ..... Sioux Falls
Finley, R. C. ..... Rapid City
Fisk, R. G. ..... Dell Rapids
*Fleeger, R. B. ..... Lead
Foley, R. J. ..... Tyndall
Fox, S. W. ..... Pierre
Freimark, L. ..... Rapid City
Friefeld, S. ..... Brookings
Fritz, W. H. ..... Mitchell
Frost, D. M. ..... Sioux Falls
Frost, H. L. ..... Rapid City
Geib, W. A. ..... Rapid City
Gensler, Thomas ..... Canton
Gerber, B. C. ..... Aberdeen
Gere, R. G. ..... Mitchell
Giebink, R. R. ..... Sioux Falls
Gilbert, F. J. ..... Belle Fourche
Gillis, F. D. ..... Mitchell
Glood, D. ..... Viborg
Graff, L. W. ..... Britton
Grau, H. J. ..... Rapid City
*Green, R. D. ..... Sioux Falls
Greenfield, D. L. ..... Sioux Falls
Greenfield, R. E. ..... Sioux Falls
Greenough, E. E. ..... Sioux Falls
Gregg, J. B. ..... Sioux Falls
Gregory, D. A. ..... Milbank
Gross, H. Phil ..... Sioux Falls
Grove, M. S. ..... Sioux Falls
Grover, W. W. ..... Bondeul, Wisc.
Grundy, Betty Lou ..... Lead
Gryte, C. F. ..... Huron
Gunc, Bedrettin ..... Herreid
Gwinn, C. B. ..... Rapid City
Gysin, Walter ..... Watertown
Haas, F. W. ..... Yankton
Hagan, A. S. ..... Faulkton
Hage, W. J. ..... Sioux Falls
Hagin, J. C. ..... Miller
Hamm, J. N. ..... Sturgis
Hanisch, E. C., Jr. ..... Huron
Hansen, H. F. ..... Sioux Falls
Hanson, W. O. ..... Huron
Hare, H. J. ..... Rapid City
*Hare, Lyle ..... Spearfish
Haugan, H. O. ..... Rapid City
Hayes, R. H. ..... Winner
Heinrichs, E. H. ..... Watertown
Hendeles, Frieda ..... Yankton
Henry, Robert ..... Brookings
Hewitt, J. M. ..... Rapid City
*Hill, J. F. ..... Yankton
Hines, Thomas ..... Miller
Hockett, R. D. ..... Mitchell
Hofer, E. A. ..... Huron
Hohm, Paul ..... Huron
Hohm, Theo. ..... Huron
Holland, L. W. ..... Chamberlain
Honke, R. W. ..... Wagner
Horthy, A. ..... Kennebec
Horthy, K. ..... Kennebec
Hosen, R. S. ..... Sioux Falls
Hoskins, J. H. ..... Sioux Falls
Hovland, James I. ..... Aberdeen
Hubner, R. F. ..... Yankton
Huet, G. M. ..... Huron
Huppler, E. G. ..... Watertown
Hura, R. ..... Howard
Hvam, Ole ..... Quinn
Ihle, C. W. ..... Sioux Falls
Illig, K. M. ..... Pierre
*Jackson, A. S. ..... Rapid City
Jacobson, T. R. ..... Hot Springs
Jameson, G. M. ..... Sioux Falls
Jahraus, R. C. ..... Pierre
Janavs, V. ..... Milbank
Janis, J. B. ..... Sioux Falls
Janss, William ..... Rapid City
Janusz, A. J. ..... Aberdeen
Jatoi, A. M. ..... Deadwood
Johnson, C. A. ..... Lemmon
Johnson, C. F. ..... Yankton
Johnson, E. A. ..... Milbank
Johnson, Robert ..... Rapid City
Jones, R. S. ..... Rapid City
Jones, W. E. ..... Sturgis
Jones, W. L. ..... Sioux Falls
Judge, W. T. ..... Milbank
Kahler, Stephen ..... Sioux Falls
Kalda, E. F. ..... Platte
Karlins, W. H. ..... Webster
Kass, Joseph ..... Rosholt
Kaufman, I. I. ..... Freeman
Kaul, Lothar ..... Sioux Falls
Keegan, Agnes ..... Aberdeen
Kegaries, D. L. ..... Rapid City
Keller, L. W. ..... Webster
*Keller, S. A. ..... California
Kemper, C. E. ..... Viborg
Kershner, C. M. ..... Brookings
Kilpatrick, W. R. J. ..... Huron
King, B. F. ..... Aberdeen
King, L., Jr. ..... Sioux Falls

Kittelson, H. O. ..... Sioux Falls
Klar, W. ..... Flandreau
Kleinsasser, G. ..... Scotland
Knabe, G. W. ..... Vermillion
Knowles, R. C. ..... Sioux Falls
Kohlmeyer, F. C. ..... Sioux Falls
Koren, P. H. ..... Rapid City
Kosse, Karl ..... Aberdeen
Kovarik, R. A. ..... Rapid City
Kovarik, W. J. ..... Rapid City
Kryger, P. ..... Groton
Kwan, F. P. ..... Rapid City
Lakstigala, Peter ..... White River
Lampert, A. A. ..... Rapid City
Lardinois, C. C. ..... Huron
Larson, C. S. ..... Sioux Falls
Leander, R. B. ..... Sioux Falls
Leeds, J. F. ..... Rapid City
Leigh, F. D. ..... Huron
Lenz, B. T. ..... Huron
Leon, Paul ..... Aberdeen
Leraan, L. G. ..... Sioux Falls
Lewis, H. R. ..... Mitchell
Lie, Dagfinn ..... Webster
Lietzke, E. T. ..... Beresford
Lindbloom, B. O. ..... Pierre
Linde, Leonard ..... Mobridge
Lloyd, J. H. ..... Mitchell
Lovering, J. ..... Webster
Lowe, Harold ..... Mobridge
Lushbough, B. C. ..... Brookings
Lydiatt, J. ..... Hot Springs
Lynn, R. J. ..... Edgemont
Lyso, M. ..... Yankton
Mabee, D. R. ..... Mitchell
Mabee, J. O. ..... Mitchell
Mabee, O. J. ..... Mitchell
MacDonough, H. J. Hot Springs
Magtibay, M. ..... Bryant
Mangulis, G. ..... Philip
Manning, D. H. ..... Sioux Falls
Maresh, E. R. ..... Sioux Falls
Marousek, M. ..... Belle Fourche
Marr, L. ..... Estelline
Marr, V. ..... Estelline
Mattice, Lloyd ..... Sioux Falls
Mattox, J. E. ..... Deadwood
Mead, T. ..... Spearfish
Mendoza, Carlos ..... Huron
Merryman, M. P. ..... Rapid City
Meyer, W. L. ..... Hot Springs
Millea, R. P. ..... Rapid City
*Mills, G. W. ..... Wall
Moller, C. ..... Dell Rapids
Monfore, James ..... Winner
Mongeon, C. L. ..... California
Monson, C. D. ..... Parkston
Moore, E. J. ..... Vermillion
Morrissey, M. M. ..... Pierre
Mueller, E. H. ..... Tripp
Muggly, J. A. ..... Madison
Murdy, B. C. ..... Aberdeen
Murdy, C. B. ..... Aberdeen
Murphy, J. C. ..... Murdo
Mutch, M. G. ..... Sioux Falls
McCann, J. P. ..... Parkston
McCarthy, P. V. ..... Aberdeen
McCroskey, R. C. ..... Rapid City
McDonald, C. J. ..... Sioux Falls
McGreevy, E. J. ..... Sioux Falls
McGreevy, J. V. ..... Sioux Falls
McHardy, B. R. ..... Sioux Falls
McIntosh, G. F. ..... Eureka
McManus, T. B. ..... Wess. Springs
McVay, C. B. ..... Yankton
Nelson, Earl ..... Lake Andes
*Nelson, J. A. ..... California
Nelson, P. S. ..... Watertown
Nelson, R. E. ..... Sioux Falls
Nemer, R. G. ..... Gregory
Nolan, B. P. ..... Mobridge
Nordmo, S. H. ..... Vermillion
Norgello, V. ..... Redfield
Odland, W. B. ..... Huron
Ogborn, R. J. ..... Sioux Falls
Olson, R. G. ..... Sioux Falls
Opheim, W. L. ..... Sioux Falls
Orgusaar, R. ..... Florida
Orr, R. T. ..... Sioux Falls
Ortmeier, D. ..... Sioux Falls
Otey, B. T. ..... Flandreau
O'Toole, T. F. ..... Rapid City
Owen, G. S. ..... Rapid City
Palmerton, E. S. ..... Rapid City
*Pankow, L. J. ..... Sioux Falls
*Parke, L. L. ..... Canton
Pasek, E. A. ..... Sioux Falls
Patt, W. H. ..... Brookings
Patterson, D. ..... Redfield
Paulson, G. S. ..... Rapid City
Peeke, A. P. ..... Volga
Peik, D. J. ..... Sioux Falls
Peiper, W. ..... Mitchell
*Pemberton, M. O. ..... Deadwood
Perry, E. J. ..... Redfield
Peters, E. H. ..... Sioux Falls
Petres, A. ..... Salem
Pfisterer, T. R. ..... Redfield
Plowman, E. T. ..... Brookings
Pokorny, J. F. ..... Newell
Porter, M. H. ..... Parkston
Porter, Richard ..... Yankton
Price, Ronald ..... Armour
Quinn, R. H. ..... Sioux Falls
*Quinn, R. J. ..... Sioux Falls
*Radusch, F. J. ..... Rapid City
Ranney, Brooks ..... Yankton
Read, Leland ..... Edgemont
Reade, D. M. ..... Yankton
Reagan, J. L. ..... Madison
Reagan, P. R. ..... Sioux Falls
Reaney, D. B. ..... Yankton
Reding, A. P. ..... Marion
Reul, T. W. ..... Watertown
Riesberg, E. ..... Yankton
Roberts, C. S., Jr. ..... Brookings
Rodine, J. C. ..... Aberdeen
Roman, T. P. ..... Martin
Roper, C. E. ..... Hot Springs
Rousseau, M. C. ..... Watertown
Rudolph, E. A. ..... Aberdeen
Ruud, E. T. ..... Rapid City
Ryan, C. F. ..... Watertown
Sabbagh, M. ..... McLaughlin
Salladay, I. R. ..... Ft. Meade
Sanders, M. E. ..... Redfield
Sanderson, E. W. ..... Sioux Falls
Saoi, N. B. ..... Yankton
Sattler, T. H. ..... Yankton
Savage, L. ..... Yankton
Saxton, A. J. ..... Kansas
Saxton, W. H. ..... Huron
Saylor, H. L., Jr. ..... Huron
Scheffel, A. ..... Redfield
Scheller, D. L. ..... Arlington
Seaman, David ..... Aberdeen
Sebring, F. U. ..... Vermillion
Semones, A., Jr. ..... Lead
Sercl, W. F. ..... Sioux Falls
Shaeffer, J. H. ..... Sioux Falls
Shaskey, R. E. ..... Brookings
Sherrill, S. F. ..... Belle Fourche
*Sherwood, C. E. ..... Madison
Shreves, H. ..... Sioux Falls
Simon, S. ..... Pierre
Skogmo, B. R. ..... Mitchell
Slingsby, J. B. ..... Rapid City
Smiley, J. C. ..... Deadwood
Smith, G. W. ..... Sioux Falls
Spain, M. L. ..... Rapid City
Spears, B. ..... Pierre
Spicer, E. R. P. ..... Aberdeen
Spiry, A. W. ..... Mobridge
Staats, R. S. (M.S.) ..... New York
Stahmann, F. S. ..... Sioux Falls
Stanage, W. F. ..... Yankton
Standard, R. A. ..... Aberdeen
Steele, G. H. ..... Aberdeen
Steele, J. P. ..... Yankton
Steiner, P. ..... Sioux Falls
Stensrud, H. J. ..... Madison
Stern, C. A. ..... Sioux Falls
Stoltz, C. R. ..... Watertown
Stransky, J. J. ..... Watertown
Strauss, B. ..... Parker
Studenberg, D. ..... Gregory
Studenberg, J. E. ..... Winner
Sundet, N. J. ..... Kadoka
Swanson, C. L. ..... Pierre
Sweeny, W. T. ..... Aberdeen
Sweet, E. P. ..... Burke
Swisher, L. P. ..... Kadoka
Tank, M. C. ..... Brookings
Taylor, Wm. R. ..... Aberdeen
Tesar, C. E. ..... Rapid City
Theissen, H. H. ..... Rapid City
Thompson, R. F. ..... Yankton
Tidd, J. T. ..... Yankton
Tieszen, A. J. ..... Pierre
Tobin, F. J. ..... Mitchell
Tobin, L. W. ..... Mitchell
Torkildson, G. ..... McLaughlin
Totten, F. C. ..... Lemmon
Tracy, G. E. ..... Watertown
Tschetter, P. S. ..... Huron
Tuohy, G. ..... Sioux Falls
Turner, C. R. ..... Brookings
Urbanyi, E. W. ..... Gettysburg
Van Demark, R. E. ..... Sioux Falls
Van Heuvelen, G. J. ..... Pierre
Van Lier, P. C. ..... Sioux Falls
Villa, J. P. ..... Freeman
Vogele, A. C. ..... Aberdeen
Vogele, C. L. ..... Aberdeen
Vogelgesang, L. C. ..... Gregory
*Volin, H. P. ..... Lennox
Volin, V. V. ..... Sioux Falls
Vonburg, V. R. ..... Mitchell
Vose, J. L. ..... Mitchell
Votaw, F. ..... Sioux Falls
Watson, E. S. ..... Brookings
Weatherill, D. W. ..... Mitchell
Weaver, R. J. ..... Sioux Falls
Weber, R. A. ..... Mitchell
Wegner, K. H. ..... Sioux Falls
Werthmann, H. ..... Pierre
Wessman, N. E. ..... Sioux Falls
Westaby, J. R. ..... Madison
Westaby, R. S., Jr. ..... Rapid City
Westland, G. I. ..... Onida
Whitney, N. R. ..... Rapid City
Whitson, G. E. ..... Madison
Willcockson, T. H. ..... Yankton
Willen, Abner ..... Clark
Williams, D. B. ..... Sioux Falls
Williams, F. R. ..... Rapid City
Williams, M. F. ..... Sioux Falls
Winters, M. D. (M.S.)
Wold, H. R. ..... Madison
Wood, G. F. ..... Rapid City
Wrage, T. R., Jr. ..... Watertown
Yackley, J. V. ..... Rapid City
Zakahi, R. J. ..... Pierre
Zandersons, V. ..... Parker
Zanka, J. A. ..... Rapid City
*Zimmerman, Goldie E.
Missoula, Montana
Zvejnieks, K. ..... Leola

M.S.—Indicates Military Service

*—Indicates Honorary Membership

BLUE SHIELD

CORPORATE BODY ANNUAL MEETING

MINUTES — MAY 15, 1965

MINUTES OF THE BLUE SHIELD CORPORATE BODY MEETING

Guest House, Watertown, South Dakota

May 15, 1965 — 3:00 p.m.

The meeting was called to order by Paul Hohm, M.D., President, at 3:00 p.m., Saturday, May 15, 1965.

Present for roll call were the following doctors: Steele, Hohm, Brogdon, Reding, Giebink, Quinn, Perry, Stransky, Tank, Askwig, Leigh, Lietzke, Sattler, Elston, Nelson, Sweet, Lowe, Johnson, Bloemendaal, Bunker, Tracy, Scheller, Anderson, Werthman, Hohm, Hanson, Lewis, Mabee, Church, Gregg, Brzica, Ensberg, Myrabo, Sanderson, Knowles, Knabe, Foley, Standard, Swanson, Ruud, Gilbert, Johnson, Lie, Lynn, Dzintars, Lakstigala.

Dr. Tank moved to dispense with the reading of the minutes of the last meeting. Dr. Tracy seconded the motion and it carried.

Richard C. Erickson discussed the Financial Report.

Dr. Myrabo moved that the Body accept the report of the Nominating Committee who recommended the re-appointment of the following to the Board of Directors, and that the Secretary be instructed to cast a unanimous ballot for the following:

C. J. McDonald, M.D.
H. Russell Brown, M.D.
James Gormley
Jerry Hill

Dr. Scheller seconded the motion and it passed.

Dr. Hohm and Richard Erickson discussed the status of the Major Medical Proposal which was made by the 1964 House of Delegates.

Dr. Elston moved that the following resolution as presented by the Council of the South Dakota Medical Association be adopted:

WHEREAS, in the event of the passage of medical voluntary supplemental health care legislation for those over 65, the participation of Blue Shield in this activity must be within the established principles and capacities of Blue Shield so to serve.

THEREFORE BE IT RESOLVED, that the House of Delegates of the South Dakota State Medical Association, and the Corporate Body of South Dakota Medical Services, Inc. hereby authorizes the Board of Directors of South Dakota Blue Shield to offer the services of Blue Shield in the public interest, in a manner that will maintain good quality of medical care, freedom of choice of physician, no interference in the patient-physician relationship.

The motion was seconded by Dr. Leigh.

Dr. Church amended the motion contingent on the action of the House of Delegates at the next meeting. Dr. Giebink seconded the motion to amend and it carried unanimously.

A vote was taken on the resolution as amended and it carried unanimously.

A motion was made by Dr. Myrabo on behalf of the Seventh District Medical Society that Blue Shield discontinue all high-level policies and that the high-level contracts be turned over to commercial insurance carriers. The motion was seconded by Dr. Giebink. A discussion followed.

A discussion by Dr. Giebink indicated that at the last meeting of the Seventh Medical District, the District was dissatisfied with Blue Shield. At that time, Dr. Knowles proposed (1) discontinuance completely, (2) discontinuance of high-level Federal Employees Program, NWBT, and National Accounts, (3) that Blue Shield cut back and re-establish its original purpose of providing pre-paid medical care to the near indigent.

Dr. Sanderson offered an amendment to the motion that no other high-level or National Accounts be accepted. Dr. Sanderson's motion failed to carry for lack of a second.

Dr. Knabe offered a motion that a method be established to re-study the original motion as presented by Dr. Myrabo. The motion also failed to carry for lack of a second.

A vote on the question before the Body (motion by Dr. Myrabo) was rejected by the majority of the Body.

Dr. Perry moved that the meeting be adjourned. The motion was seconded by Dr. Leigh, and the meeting adjourned at 4:15 p.m.

SOUTH DAKOTA MEDICAL SERVICE, INC.
COMPARATIVE BALANCE SHEETS
DECEMBER 31, 1963 AND DECEMBER 31, 1964

ASSETS

	December 31, 1963	December 31, 1964	Increase Decrease*
Ledger Assets:			
Cash on hand and in bank	$ 89,170.94	$ 84,736.34	$ 4,434.60*
Accounts receivable—Federal Program	3,026.64	22,787.35	19,760.71
Accounts receivable—O.A.A. Program	5,000.00	5,000.00	-0-
Accounts receivable—N.W. Bell Tel. Co.	1,428.50	2,697.60	1,269.10
Savings Certificates:			
First Nat'l Bank, Sioux Falls, S. Dak.	20,000.00	20,000.00	-0-
First Nat'l Bank, Sioux Falls, S. Dak.	5,000.00	5,000.00	-0-
Farmers & Merchants Bank, Aberdeen, South Dakota.	10,000.00	10,000.00	-0-
Western State Bank, Sioux Falls, S. Dak.	10,000.00	10,000.00	-0-
American National Bank, Rapid City, South Dakota	10,000.00	10,000.00	-0-
First Federal Savings & Loan, Sioux Falls, South Dakota	-0-	5,000.00	5,000.00
Home Federal Savings & Loan, Sioux Falls, South Dakota.	-0-	5,000.00	5,000.00
U. S. Government—Treasury Note	10,051.30	10,000.00	51.30*
Stock—Rushmore Credit Corp., Huron, South Dakota.	1,000.00	1,000.00	-0-
Mortgage Loan—S. D. Medical Ass'n	22,225.48	21,308.83	916.65*
Total Ledger Assets	**$186,902.86**	**$ 212,530.12**	**$ 25,627.26**

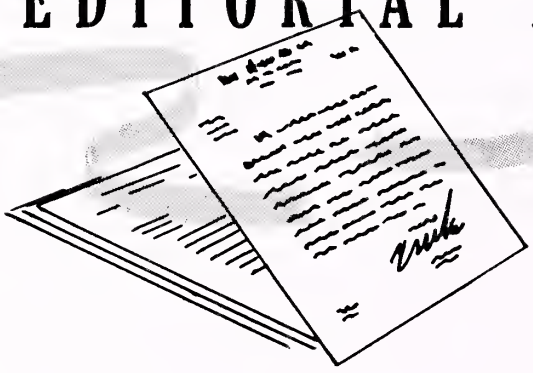
LIABILITIES AND RESERVES

Liabilities:			
Accrued State of South Dakota premium tax payable	$ 3,179.01	$ 4,088.70	909.69
Withholding tax payable	642.08	514.34	127.74*
Social security tax payable	72.27	71.09	1.18*
Accounts payable—Federal and N.W. Bell Telephone group	9,639.00	9,815.00	176.00
Total Liabilities	**$ 13,532.36**	**$ 14,489.13**	**$ 956.77**
Deferred Income:			
Unearned subscriber dues	$ 51,484.02	$ 53,190.38	$ 1,706.36
Reserves:			
Estimated claims—not reported	$ 53,000.00	$ 60,000.00	$ 7,000.00
Surplus—Unassigned:	$ 68,886.48	$ 84,850.61	$ 15,964.13
Total Liabilities and Reserves	**$186,902.86**	**$ 212,530.12**	**$ 25,627.26**

COMPARATIVE STATEMENTS OF INCOME AND EXPENSES
YEARS ENDED DECEMBER 31, 1963 AND DECEMBER 31, 1964

	December 31, 1963	December 31, 1964	Increase Decrease*
Receipts:			
Earned subscription income	$829,308.78	$1,070,625.20	$241,316.42
Interest earned	4,058.19	4,343.77	285.58
	$833,366.97	**$1,074,968.97**	**$241,602.00**
Medical and Surgical Expenses:			
Participating physicians	$537,076.10	$ 697,180.79	$160,104.69
Non-participating physicians	145,806.59	199,853.12	54,046.53
	$682,882.69	**$ 897,033.91**	**$214,151.22**
Operating Expenses:			
Salaries	$ 42,461.48	$ 47,801.46	$ 5,339.98
Travel expense	7,202.93	5,555.42	1,647.51*
Rent	4,755.15	4,800.00	44.85
Board meeting expense	1,023.58	1,122.91	99.33
Boards, bureaus and associations	1,587.72	1,873.72	286.00
Legal expense	999.96	1,172.15	172.19
Printing and supplies	4,694.87	5,862.36	1,167.49
Books, newspapers and periodicals	132.80	141.80	9.00
Postage	2,320.17	2,204.73	115.44*
Telephone and telegraph	1,714.30	1,765.57	51.27
Advertising	7,642.35	4,899.81	2,742.54*
Insurance	171.93	92.81	79.12*
Employee relations	2,950.55	3,145.38	194.83
Auditing, actuarial and consulting	567.65	892.50	324.85
Outside service agencies	63,213.30	72,637.57	9,424.27
Miscellaneous expense	169.84	112.65	57.19*
Social security tax expense	1,140.57	1,476.23	335.66
Taxes, licenses and fees	3,763.97	4,762.35	998.38
Furniture and equipment expense	6,273.31	4,712.57	1,560.74*
	$152,786.43	**$ 165,031.99**	**$ 12,245.56**
Less—reimbursements	10,954.15	10,061.06	893.09*
Net Operating Expenses	**$141,832.28**	**$ 154,970.93**	**$ 13,138.65**
Total expenses	$824,714.97	$1,052,004.84	$227,289.87
Net Operating Income	**$ 8,652.00**	**$ 22,964.13**	**$ 14,312.13**
Other Charges or Credits:			
Estimated reserve for unreported services	8,000.00	7,000.00	1,000.00*
Net Gain to Surplus—Unassigned	**$ 652.00**	**$ 15,964.13**	**$ 15,312.13**

EDITORIAL PAGE



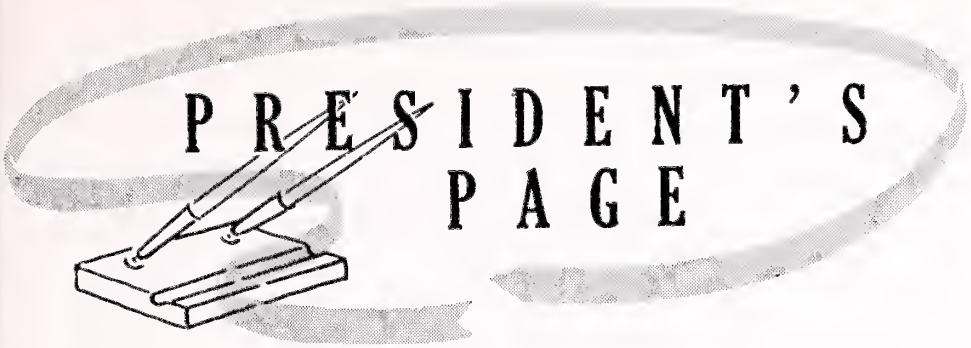
The Preceptorship Program, this Spring, witnessed another 4-weeks of medical practice exposure for the 39-students in the sophomore class at the School of Medicine, University of South Dakota. Judging by the reports from the preceptors, the student's reports, and the many direct verbal reports received, this program is a worthwhile educational experience.

It may be of more than casual interest to note that 39-students were located in 30 different towns and cities of South Dakota, assigned to 39 preceptors (practicing physicians), and exposed in a learning setting to more than 145 physicians, or about 30% of South Dakota's total physician population. If these physicians have performed their teaching duties well, surely an appreciable number of these students will give serious thought to returning to this State to practice medicine on completing their education.

This year there were 22-students who attended the S. D. State Medical meeting in Watertown with their preceptors. In spite of considerable urging, however, 17-students and their preceptors did not attend this meeting. Since it is important for the student to witness the "continued education" of the practicing physician, perhaps a better attendance can be recorded next Spring.

There is no way of measuring the time and financial sacrifice, and the inconveniences borne by the participating physicians, and especially the preceptors themselves. Their reward is in knowing they have generously contributed to the student's knowledge from more than just an educational viewpoint. The student is now better directed and self-assured as he further pursues his medical education.

W. L. Jones, M.D.



Dear Doctors:

The following report is a copy of an article I wrote and had printed in our local paper. In my opinion the article was very pertinent and necessary at that time. The report may or may not be as pertinent by the time it comes out in our Journal.

ON MEDICAL CARE BILL

There have been numerous reports in our papers, radio and television explaining and describing the great need for Medicare so that our elderly people may have the medical care which they so justly deserve. These reports have been formulated by the reporters of the various fields of communication with the facts and figures and mainly the impressions furnished them by our national government.

The facts are furnished with the aim to pass Medicare regardless of its need, cost or value for dollar invested. Surely a more comprehensive report on the true facts is needed to determine whether or not Medicare, as is now in our Senate, is good for our people and our nation.

The Doctor-patient relationship in our state is very good, and it would be my opinion that most patients have faith in their own doctor and would therefore like some explanation on Medicare by their local doctor.

We as doctors, feel that the needy elderly people, who are unable to pay their medical bills, should have aid. Actually, as we look at the care of our elderly people in our own county, we find that the care is given before ascertaining who is going to pay the bill.

Medical care is expensive and the cost of it is rising as care and diagnosis becomes more complicated. Why then should the nation be burdened for the care of all people over 65 years of age, when only about 10 to 20% are unable to financially handle their own care; especially when you look at the true facts and see who is going to pay for this giant medical bill.

It is a fact, without doubt, that the average wage earner of about $5,000 to $6,000 per year income will be even more heavily burdened with most of the cost of this new care for the elderly. It is also a true fact that the self employed wage earner of about $5,000 per year will, in his 43 years of employment, pay out about $10,850 for Medicare with absolutely no protection from it, during all those years.

During a recent visit with our senators in Washington we discussed the Medicare bill. It became quite evident that Senator Karl Mundt favors financial assistance only for the elderly people that are in need of financial assistance for their medical care. Our young wage earner who is already heavily saddled with most of the taxes is hardly able to assume this additional load. So that the young wage earner is not further burdened, Senator Mundt favors financing of medical care for the elderly needy out of the general fund.

Senator George McGovern agreed there were many objectionable sections in the bill, but he very clearly defined his position when he stated, "of course when the bill is brought up for final vote, I will vote for it." Should not our senator examine the bill in its final form and make sure it would be good for the welfare of the people he represents instead of stating, "that of course I will vote for the bill when it is up for final consideration." We must therefore conclude his vote is guided by his party interests and not by the will of his constituents.

Whenever there is intervention by the federal government in private medicine, there is always a gradual deterioration in the quality of medical care of the patient which has been so clearly demonstrated by the countries who have government controlled medicine.

Your doctors are not opposing Medicare because of any change it will make in their incomes (as it will not). We, as doctors, want to maintain our ethical and moral obligation as physicians; to take a stand, when necessary, to protect our patients from inferior medical care.

The time has come for us to determine what kind of medical care we desire and then so inform the responsible men in Congress. Let us be sure that our men in Congress are responsible to the people who put them in Congress and not some machine that they may feel indebted to for their tenure in office.

It is very urgent that we immediately advise our senators of our thinking on Medicare so they can truly cast a representative vote of their people.

Paul Hohm, M.D.
President

THE STOCK MARKET AND YOU

NO RECESSION IN SIGHT

Courtesy of J. M. Dain & Co., Inc.
Sioux Falls, South Dakota

By: Milton H. Gaster
Registered Representative

A sharp break in stock prices such as we have experienced in the last six weeks often raises questions as to whether the stock market is foreshadowing an economic recession. Such a possibility in this particular instance appears very unlikely in view of (1) the continuing upsurge in capital spending, (2) an extra boost to consumer purchasing power from excise tax reductions and an increase in social security benefits, (3) continued steady increases in spending by state and local governments, and (4) the probability that Federal Government expenditures, particularly in the welfare area, will trend upward later this year after a lengthy period of holding steady.

This does not mean to imply that there are not continued problems as indicated in the March 15 report entitled, "A Time For Care," such as international monetary difficulties, balance of payments deficits, uncertainty about sterling and continued military flare-ups around the world. Domestically, residential construction is still sluggish, auto production may be difficult to maintain the current pace, and money appears to be getting tighter.

The stock market decline was apparently triggered by the headlines which exaggerated William McChesney Martin's speech alluding to similarities with 1929. The 10% drop in stock prices which has taken place appears to have been a combination of a normal correction, following an amazing three years of uninterrupted advance which carried stock prices 75% above the 1962 levels, and investor concern about the above mentioned problems.

From a value standpoint, stock prices as measured by the Dow-Jones Industrial Average are currently equal to 16.5 times current earning power which compares with a range since 1958 of approximately 16 times to 23 times. This level is, therefore, just slightly above the price/earnings multiple at the bottom of the 1962 collapse as earnings advanced nearly as rapidly as stock prices. Consequently, it would appear that as long as the economy remains as sound as it seems to be, stocks in general appear reasonable valued and many issues look to us to be downright undervalued. The average dividend yield of around 3% is still well below that on bonds but should be enhanced by dividend increases and year end extras in view of the 10% increase in corporate earnings being experienced this year. Therefore, no valid reason can be seen for panic selling and, within the framework of appropriate portfolio management, purchases of selected common stocks are recommended.

Path CAP sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

PKU
Phenylketonuria

INTRODUCTION

Phenylketonuria (PKU, phenylpyruvic ogliophrenia) was first recognized by Folling,[1] a Norwegian physician who began his research to determine why two siblings had a peculiar urinary odor. Since 1934 a great amount of research has been conducted to determine the cause, incidence, detection, and management of phenylketonurics.

It is the purpose of this **PathCAPsule** to summarize our current knowledge of this disease in order to provide aid in the detection of PKU in new-born infants.

DESCRIPTION OF THE DISEASE

Biochemistry: Phenylketonuria was so named because of the presence of large amounts of a ketoacid, phenylpyruvic acid, in the urine of affected persons. In addition to phenylpyruvic acid, there are other abnormal metabolites that appear in the urine of phenylketonurics-phenyllactic, p-hydroxyphenylacetic, and o-hydroxyphenylacetic acids. In addition, abnormally high amounts of phenylacetylglutamine, phenylalanine, and indolic acids can be detected in the urine. The renal thresholds for phenylpyruvic acid, phenyllactic acid, and phenylacetylglutamine are very low; hence, while large amounts may be detected in the urine of phenylketonurics, little is found in the blood or cerebrospinal fluid. Blood plasma and cerebrospinal fluid do show a very marked increase over normal phenylalanine levels. Levels of other free amino acids appear to be normal, and no peculiarity in tissue proteins has been observed. In newborn infants these increased blood levels can be detected in 2-5 days after birth. On the other hand, increased urinary metabolites are detected usually only after 2-3 weeks. Thus biochemically, phenylketonuria is characterized by the high level of phenylalanine in the blood, cerebrospinal fluid and urine of affected individuals. This is associated with the occurrence of grossly abnormal amounts of urinary metabolites of phenylalanine and of indole derivatives.

Metabolic Disorder: Phenylalanine is an essential amino acid and is present in all dietary proteins. In normal individuals phenylalanine is irreversibly transformed in the liver to tyrosine (a non-essential amino acid). It has been found that the enzyme which catalyzes this reaction, phenylalanine hydroxylase, is absent (or present in extremely small amounts) in phenylketonurics. Since the conversion to tyrosine is blocked, phenylalanine concentration in the body increases. Alternate metabolic pathways are then utilized by body enzymes and other phenylalanine metabolites are formed.

Genetic Findings: PKU has been found to be a Mendelian recessive trait and, until recently, thought to have an incidence of 1 in 20,000 births. There are, however, recent reports that the incidence of PKU may be closer to 1 in every 10,000 births. Hence, there has developed widespread interest in detecting phenylketonurics during the first few weeks of life, since early treatment must be instituted to prevent irreversible damage.

Effects of PKU: All individuals who have been found to excrete phenylpyruvic acid and other abnormal metabolites of phenylalanine in their urine have shown some degree of mental impairment. It is suspected, but not known with any certainty, that the increased amounts of phenylalanine or one of the metabolites is toxic and is responsible for the mental defect and lesions. It has been reported that over 90 percent of untreated phenylketonurics have an I.Q. of 60 or less.[2] In addition to mental deficiency, convulsive seizures, dermatitis, musty odor, and fair hair are frequently observed in phenylketonurics.

TREATMENT

Recent experiences with low-phenylalanine diet have provided convincing evidence that mental retardation associated with PKU is a preventable consequence **provided the treatment is started early.**[3] This treatment should begin within the first few weeks after birth if mental impairment is to be prevented. There are indications that special diets low in phenylalanine are required for the first few years of life. Treatment of PKU is difficult because precise control of phenylalanine intake and phenylalanine balance is necessary. A sufficient amount of phenylalanine must be available for normal

growth and development and yet an excess must be avoided to prevent mental retardation. In addition, the phenylalanine requirement varies with age, rate of growth, and the individual. The maximum requirement appears to be at about 7 months of age; after 10-18 months the metabolic requirement for phenylalanine is considerably decreased. It is advisable, therefore, to check serum phenylalanine levels periodically during treatment. Benefits of therapy include amelioration of eczema, darkening of hair, improved behavior with less restlessness and irritability, and increased ability to concentrate and learn. There is an improvement in the abnormalities in the EEG and motor performances and cessation of convulsions.

DETECTION

Early detection of phenylketonurics is based upon two tests: (1) the Guthrie[4] test and (2) the quantitative assay for phenylalanine in the blood. The Guthrie test should be done 3-5 days after birth. This test is a microbiological assay which measures the ability of the patient's blood to prevent the inhibition of growth of **Bacillus subtilis** by thienylalanine, an antagonist to phenylalanine. The test requires small filter paper discs impregnated with the patient's blood (obtained by heel puncture). Since false positives do result from the Guthrie screening test, all positives should be checked for blood phenylalanine concentration. Such tests are conducted by chromatographic, fluorimetric, or enzymatic procedures. Only if such quantitative procedures show abnormally high phenylalanine blood levels should special dietary management be started. Ferric chloride tests on wet diapers and dipstick tests on urine are helpful in detecting abnormal urinary metabolites. However, such tests, do not usually detect the abnormality until 2-6 weeks of age and must be confirmed by the Guthrie test and the quantitative phenylalanine assay.

LEVELS IN BLOOD AND URINE

	Normal mg/100 ml	PKU mg/100 ml
Serum Phenylalanine (1 week of age)	0.7-1.0	6-50
Urine Phenylpyruvic acid (5 weeks of age)	0	15-45

ADULT URINARY VALUES

	mg/day	mg/day
Phenylalanine	10-30	3000-750
Phenylpyruvic acid	Trace	1700-2700
Phenyllactic acid	Trace	600-1300
o-Hydroxyphenylacetic Acid	1	140-560
Indolic Acids	20	100-400

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1. Folling, Asbjorn, Zeitschrift Physiol Chem. 227, 169, (1934)
2. Partington, M. W., Canad. Med. Assoc. J. 86, 736 (1962)
3. LaDu, B. N., Ann Int. Med. 51, 1427 (1959)
4. Guthrie, R., J. Am. Med. Assoc. 178, 863 (1961)

The Plight of the Fetus

There are certain drugs which are very hazardous to the fetus. There are others which, experiments indicate, may be dangerous. Then there are those drugs which are circumstantially suspected of being hazardous. This leaves few drugs available for use. Medication cannot stop altogether while physicians wait for the future to provide the answers. As current guide lines, when the parturient needs treatment, drugs must be judged not on the impossible basis of absolute safety, but on a basis of no known added risk. With such a standard, the physician can continue to prescribe for his patients. — Editorial in **Massachusetts Physician,** 23:7, (Mar.) 1965.

* * *

The Ideal Research Subject

There are many advantages to research on human beings. The subject is awake and responsive throughout the study. He can participate and report his experiences during the experiment. No anesthetic intervenes to mask or alter the response. The conscious human subject also provides a continuous stimulus to the investigator to be accurate, careful. The investigator who studies man must have a high degree of responsibility and confidence in what he is doing. In man there is little tendency to administer excessive doses of a drug. They are kept constant from one subject to another. No effort is made to seek a response with large physiologically unsound dosages of an experimental drug and negative results are accepted as such. — Louis H. Nahum, M.D., in **Connecticut Medicine,** 92:2, (Feb.) 1965.

Estelline, South Dakota is in need of another physician. New Hospital in town. Local physicians and community offers every assistance. Contact Dr. Marr, Estelline, South Dakota 57234.

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MEDICAL ASSOCIATION

News Notes • Changes • Births • News

Pop's Proverb

The fervor of youth and the determination of maturity gradually is replaced by the reconciliation of old age.

NEWS NOTES

James P. Steele, M.D. and **Richard C. Erickson** were guests at the Rosebud District Meeting.

* * *

C. R. Herbrandson, M.D., Sioux Falls, has been named to the medical staff of the Homestake Hospital in Lead, South Dakota.

* * *

Jerry Walton, M.D. has joined **Theodore P. Roman, M.D.** at the Bennett Clinic in Brookings, South Dakota.

* * *

Bruce H. Allen, M.D. has been named to the staff of the Rapid City Medical Center. He will practice in association with **M. L. Spain, M.D.** in the eye, ear, nose and throat department at the Medical Center.

* * *

The 28th annual exhibit of the American Physicians' Art Association was held in New York City. **E. W. Urbanyi, M.D.,** Gettysburg, received honorable mention in the Classical-Realistic in Oils.

W. S. Peiper, M.D. formerly of Mitchell has moved to Robbinsdale, Minnesota.

* * *

The Third District Medical Society held their meeting at the Brookings Country Club. **Gordon W. Robertstad, M.D.,** guest speaker, presented "Fungus Diseases."

* * *

E. R. Squibb & Sons announces the appointment of **D. G. Phelan** as a full-line sales representative in the Minneapolis, Minnesota region. His territory will be Sioux Falls, South Dakota.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

Five scientists have been named to the staff of the Institute for Biomedical Research — newest center for investigation of basic life processes.

The appointments were announced by **Raymond M. McKeown, M.D.,** president of the American Medical Association Education and Research Foundation. The scientists are **George R. Collins, Clyde R. Goodheart, M.D., Roy E. Ritts, Jr., M.D., Howard A. Schneider, Ph.D.,** and **Dan W. Urry, Ph.D.**

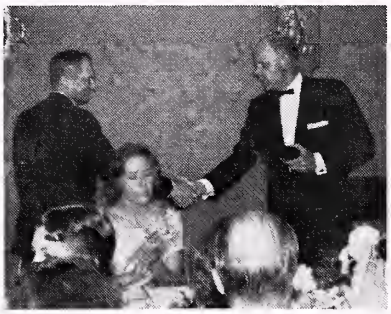
* * *

The Third Cleft Lip-Cleft Palate Diagnostic Clinic was held at the Speech and Hearing Clinic at the University of South Dakota July 15, 1965. **William Olin, D.D.S.,** Director of Cleft Palate Orthodontic Service at the University of Iowa Hospital, Iowa City, Iowa, was the guest consultant. The next clinic will be held at the Crippled Children's Hospital and School in Sioux Falls in about two months. Interested physicians are invited to participate in the clinic activities. For information contact Speech and Hearing Clinic, University of South Dakota, Vermillion, South Dakota.

CONVENTION SCENES



Dr. Harold Schuknecht receiving Honorary Award from Dr. Pat Steele.



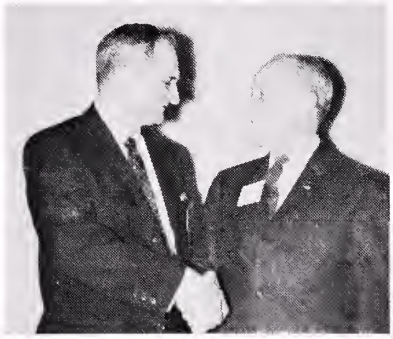
Dr. Paul Hohm, President of SD-SMA receives Congratulations from out-going President Dr. Pat Steele.



Dr. Myrtle Carney, receiving 50 year Award.



Dr. Alonzo Peeke receiving the Community Service Award.



Dr. Paul Hohm, with AMA President Dr. Donovan Ward.



Dr. Pat Steele presenting the Distinguished Service Award to Dr. Art Reding.



New Association Officers: Dr. John Stranskv, Vice President; Dr. Preston Brogdon, President Elect; Dr. Paul Hohm, President.



Mrs. C. L. Vogele, President of SDSMA's Auxiliary, chats with Mrs. Wm. Evans, National Auxiliary President.

A Committee for the Conservation of Hearing for this State was formed at the recent meeting of the South Dakota Academy of Ophthalmology and Otolaryngology. Its principal function will be to promote education of the public relating to prevention of hearing losses due to infection, noise, and other sources. For information contact **W. B. Odland, M.D.,** Huron Clinic, Huron, South Dakota or **John B. Gregg, M.D.,** 318-D W. 18th Street, Sioux Falls, South Dakota.

* * *

A one day scientific session on stroke will be featured in the program of the American Heart Association's 1965 Scientific Sessions, to be held October 15-17 at the Americana Hotel, Bal Harbour, Florida. The session on Stroke will take place Saturday, October 16, 1965.

The Annual West North-Central Interprofessional Seminar on Diseases Common to Animals and Man will meet at the University Hospital in Iowa City, Iowa, on September 16-17, 1965.

Further details of the program may be obtained from **Dr. William F. McCulloch,** Institute of Agricultural Medicine, University of Iowa, Iowa City.

Recommended Dosage of Lomotil Liquid to Control Diarrhea

File: Diarrhea

LOMOTIL®

Age	INITIAL LOMOTIL LIQUID DOSAGE*
3-6 mo.	½ tsp. t.i.d. (3 mg.)
6-12 mo.	½ tsp. q.i.d. (4 mg.)
1-2 yr.	½ tsp. 5 times daily (5 mg.)
2-5 yr.	1 tsp. t.i.d. (6 mg.)
5-8 yr.	1 tsp. q.i.d. (8 mg.)
8-12 yr.	1 tsp. 5 times daily (10 mg.)
Adult	2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per average teaspoonful.
Note: After diarrhea is controlled the initial dosage can usually be reduced to meet the requirements of the individual patient.

LOMOTIL® TABLETS/LIQUID

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride .....2.5 mg.
(Warning: May be habit forming)
atropine sulfate .....0.025 mg.

Precautions
Lomotil is an exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Cautions and Side Effects
Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

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especially in elderly or debilitated patients

and in diabetics — patients with a history of fungal overgrowth — patients on steroids who require antibiotics. The antimonilial specificity of Nystatin plus the extra benefits of DECLOMYCIN Demethylchlortetracycline allow lower mg intake per dose per day, the option of b.i.d. dosage, higher activity levels, 1-2 days' "extra" activity.

Side Effects typical of tetracyclines include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis, dermatitis, overgrowth of nonsusceptible organisms, tooth discoloration (if given during tooth formation) and increased intracranial pressure (in young infants). Also, very rarely, anaphylactoid reaction. Reduce dosage in impaired renal function. Because of reactions to artificial or natural sunlight (even from short exposure and at low dosage), patient should be warned to avoid direct exposure. Stop drug immediately at the first sign of adverse reaction. It should not be taken with high calcium drugs or food; and should not be taken less than one hour before, or two hours after meals.

Average Adult Daily Dosage: four divided doses of 1 capsule each or two divided doses of 2 capsules.

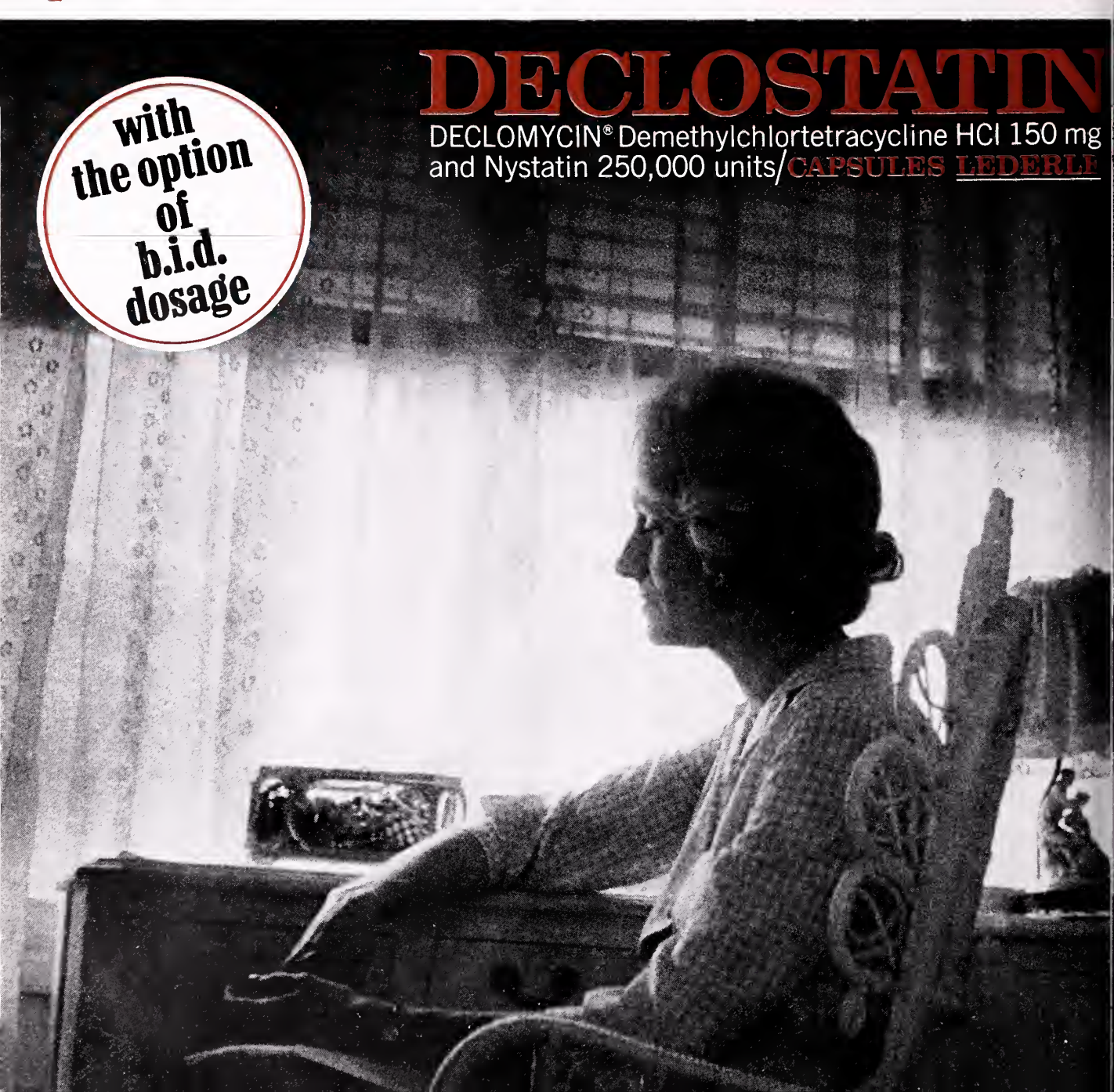
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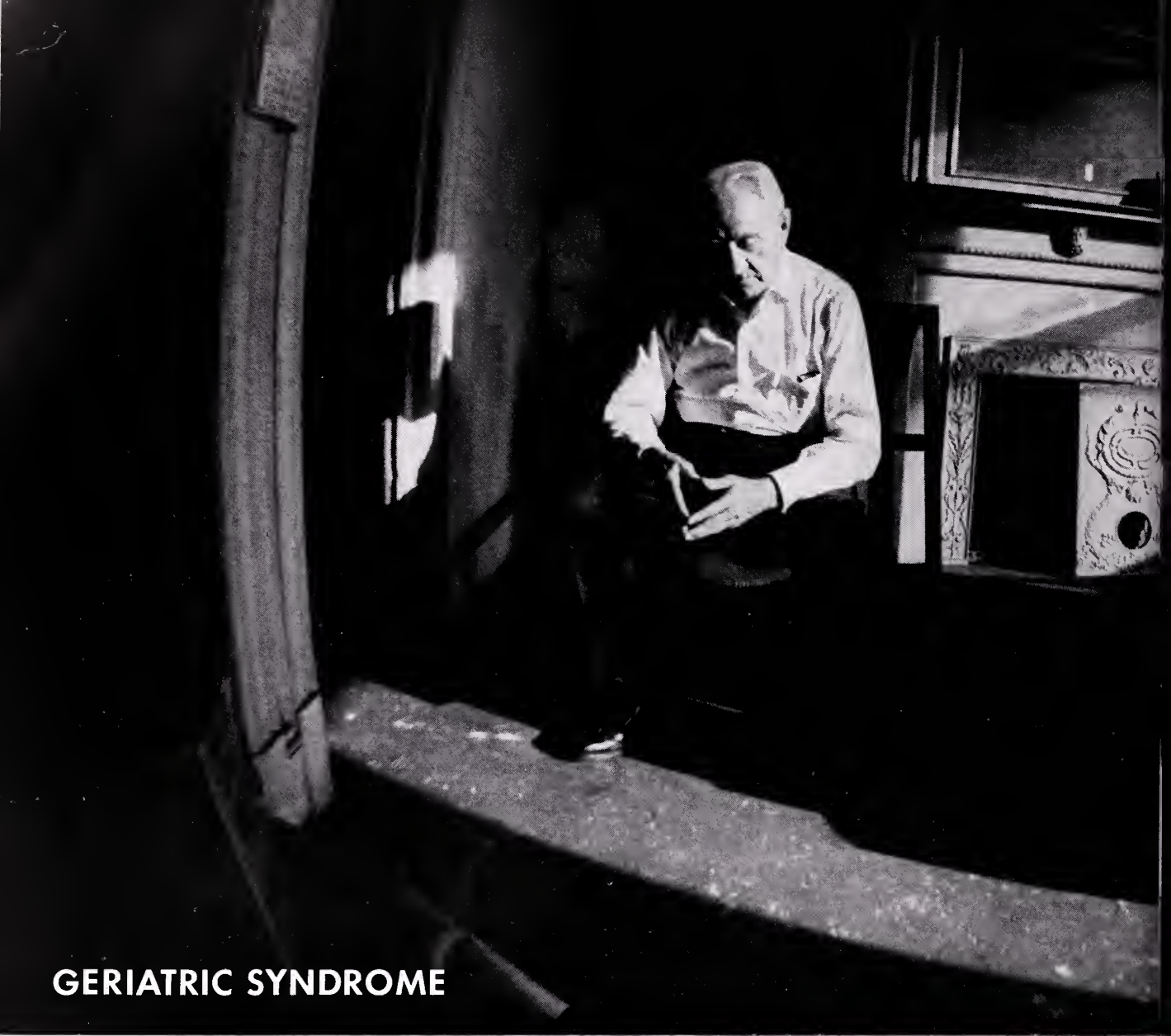
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ide effects and precautions: The transitory rowsiness which may occur with hydroxyzine Cl usually disappears spontaneously in a few ays with continued therapy, or is correctable y dosage reduction. Dryness of the mouth may e seen with higher doses. Involuntary motor ctivity has been reported in hospitalized atients on higher than recommended doses. ydroxyzine HCl may potentiate CNS depres- nts, narcotics such as meperidine, barbitu- tes, and anticoagulants. In conjunctive use, osage for these drugs should be decreased. ecause drowsiness may occur, patients should e cautioned against driving a car or operat- g dangerous machinery. **Parenteral Solution recoutions and contraindicotions:** This dosage rm is intended only for I.M. or I.V. odminis- ation and should not, under any circum- ances, be injected subcutaneously or intra- rteriolly. When the usual precautions for I.M. jection have been followed, reports of soft ssue reactions have been rare. I.V. adminis- ation should be slow, no faster than 25 mg. er minute, and should not exceed 100 mg. in ny single dose. Particular care should be used insure injection only into intact veins; a few stances of digital gangrene occurring distal the injection site have been attributed to advertent intraarterial injection or periarte- al extravasation, both of which should be voided. **More detailed professional informa- on ovoiloble on request.**

'Nonexistent' Drug Reactions

It is all very well for the profession and the public to be alert and alarmed at drug reactions, and to do everything in their power to keep these at a minimum. Nevertheless, to me . . . the pendulum has swung far too much in the other direction, to the extent that many individual members of the public, to my personal knowledge, are more concerned about nonexistent reactions than they are with the evident benefit they have obtained from the drug they are taking. — Irwin C. Winter, Ph.D., M.D., in **Journal of New Drugs**, 4:6, (Nov.-Dec.) 1964.

Used general medical, surgical and waiting room equipment for sale including Picker X-ray and Ritter Table. Write to R. T. Satterfield, M.D., 724 East Jefferson Street, Millard, Nebraska 68043.

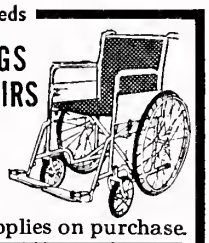
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GROWTH

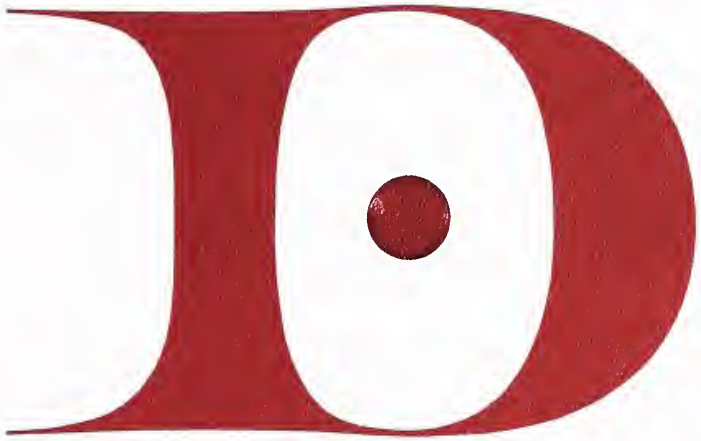
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DECLOMYCIN® Demethylchlortetracycline HCl TABLETS (Film Coated)

Available dosage forms: Film Coated Tablets containing 150 mg. and 300 mg. demethylchlortetracycline HCl.

ACTION: DECLOMYCIN Demethylchlortetracycline is a broad-spectrum antibiotic derived from a strain of *Streptomyces aureofaciens*. Demethylchlortetracycline is closely related chemically to tetracycline and has been shown to have several advantages which make it a valuable aid to antimicrobial therapeutics. It has a greater antibiotic potency which makes it possible to achieve therapeutic activity with less weight of antibiotic. It has a greater stability in body fluids due to a slow degradation. It has been shown to have a reduced renal clearance rate which produces a prolongation of the antibacterial levels in the body.

The average adult daily dose of DECLOMYCIN Demethylchlortetracycline (600 mg.) may be considered to be the equivalent of 1,000 mg. of tetracycline per day.

INDICATIONS: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

The following conditions have been successfully treated:

Abscess
Acne
Bronchiectasis
Bronchiolitis
Bronchitis
Bronchopulmonary Infection
Cellulitis
Cystitis
Endometritis
Erysipelas
Furunculosis
Genitourinary Infection
Laryngotracheitis
Mixed Bacterial Infection
Non-Specific Urethritis
Otitis (Externa or Media)
Pharyngitis
Pneumonia
Pre- and Postoperative Prophylaxis of Infection
Primary Atypical Pneumonia
Primary and Secondary Syphilis
Pustular Folliculitis
Pyelonephritis
Pyoderma
Sinusitis
Streptococcal Sore Throat
Tonsillitis

associated with tetracycline-sensitive organisms such as the following:

Eaton Agent
Endamoeba histolytica
Hemophilus influenzae
Pneumococci
Escherichia coli
Gonococci
Shigellae
Staphylococci
Streptococci

Evaluation in other infections and conditions is continuing.

DECLOMYCIN Demethylchlortetracycline is indicated for surgical and dental preoperative and postoperative prophylaxis of infection in contaminated fields. Since penicillin is the drug of choice for syphilis and gonorrhea, it should be employed in these infections except in patients with a history of penicillin allergy.

In cases of acute gonococcal urethritis where a primary or secondary lesion of syphilis is suspected, proper diagnostic procedures including darkfield examination should be followed. In all other cases where concomitant syphilis is suspected, serological tests should be made monthly for at least three months.

In patients with agammaglobulinemia or hypogammaglobulinemia and recurring infections, it is necessary to treat with both gamma globulin and an antibiotic such as DECLOMYCIN Demethylchlortetracycline.

DECLOMYCIN Demethylchlortetracycline shows activity against some strains of *Pseudomonas* and *Proteus* heretofore unresponsive to tetracycline therapy as shown by both *in vivo* and *in vitro* studies.

In the treatment of staphylococcus infections, indicated surgical procedures must be performed in all cases.

WARNING: If renal impairment exists, even usual oral or parenteral doses may lead to excessive systemic accumulation of the drug and possible liver toxicity. Under such conditions, lower than usual doses are indicated and if therapy is prolonged, demethylchlortetracycline serum level determinations may be advisable.[1,2,3]

A photodynamic reaction precipitated by direct exposure to natural or artificial sunlight has been observed in some individuals. Small amounts of drug and short exposure to these sources of sunlight may produce an exaggerated sunburn reaction which may range from erythema over the exposed parts of the body to severe skin manifestations. In a smaller proportion, photoallergic reactions to this drug, as well as other tetracycline derivatives, have also been reported.

Such patients should be warned to avoid direct exposure to natural or artificial sunlight while under treatment and to discontinue the drug at the first evidence of skin discomfort.

Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

PRECAUTIONS AND SIDE EFFECTS: The use of antibiotics occasionally may result in overgrowth of nonsusceptible organisms. Constant observation of the patient is essential. If new infections appear during therapy, appropriate measures should be taken.

Demethylchlortetracycline may form a stable calcium complex in any bone forming tissue with no serious harmful effects reported thus far in humans. However, use of demethylchlortetracycline during tooth development (= last trimester of pregnancy, neonatal period and early childhood) may cause discoloration of the teeth (=yellow-grey-brownish). This effect occurs mostly during long-term use of the drug but it has also been observed in usual short treatment courses.

As with all other antibiotics, side reactions which might be encountered include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis and dermatitis. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Rare cases of anaphylactoid reactions have been reported following demethylchlortetracycline. Appropriate precaution is advised.

With full therapeutic doses in infants, increased cranial pressure with bulging fontanels has been observed. The frequency has been rare and all signs and symptoms have disappeared rapidly upon cessation of treatment.

ADMINISTRATION AND DOSAGE: *ADULT:* The average daily adult dosage is 4 divided doses of 150 mg. each or 2 divided doses of 300 mg. each.

An initial dose of 300 mg. may be used in the more severe infections, but a single dose exceeding 300 mg. is thought to be unnecessary.

INFANTS AND CHILDREN: The dosage is 3 to 6 mg. per pound body weight per day or 6 to 12 mg. per Kg. per day, divided into 2 or 4 doses dependent upon the severity of the disease. This should not be given with milk formula or other calcium containing foods and should be given at least one hour prior to feeding.

Because of the cumulative effect in the body, continuation of high doses beyond the first few days is thought to be unnecessary.

Therapy should be continued beyond the time when characteristic symptoms or fever have subsided; however, DECLOMYCIN Demethylchlortetracycline, because of its unique property of prolonged stability in body fluids, permits serum activity for 24 to 48 hours after the last dose. The incidence of rheumatic fever or glomerulonephritis following streptococcal infections suggests that therapy of a streptococcal infection should be continued for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm. given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

Primary Atypical Pneumonia (Eaton Agent): The average adult daily dosage is 900 mg. in 3 divided doses for six days.[4,5,6]

In the treatment of pustular acne vulgaris an initial dose of 600 mg. daily for one or two weeks may, in most cases, be reduced to 300 mg. or 150 mg. daily for remainder of treatment course.[7]

Absorption is impaired by the concomitant administration of high calcium content drugs such as some antacid medications, foods and some dairy products such as milk. Oral forms of demethylchlortetracycline should be given 1 hour before or 2 hours after meals.

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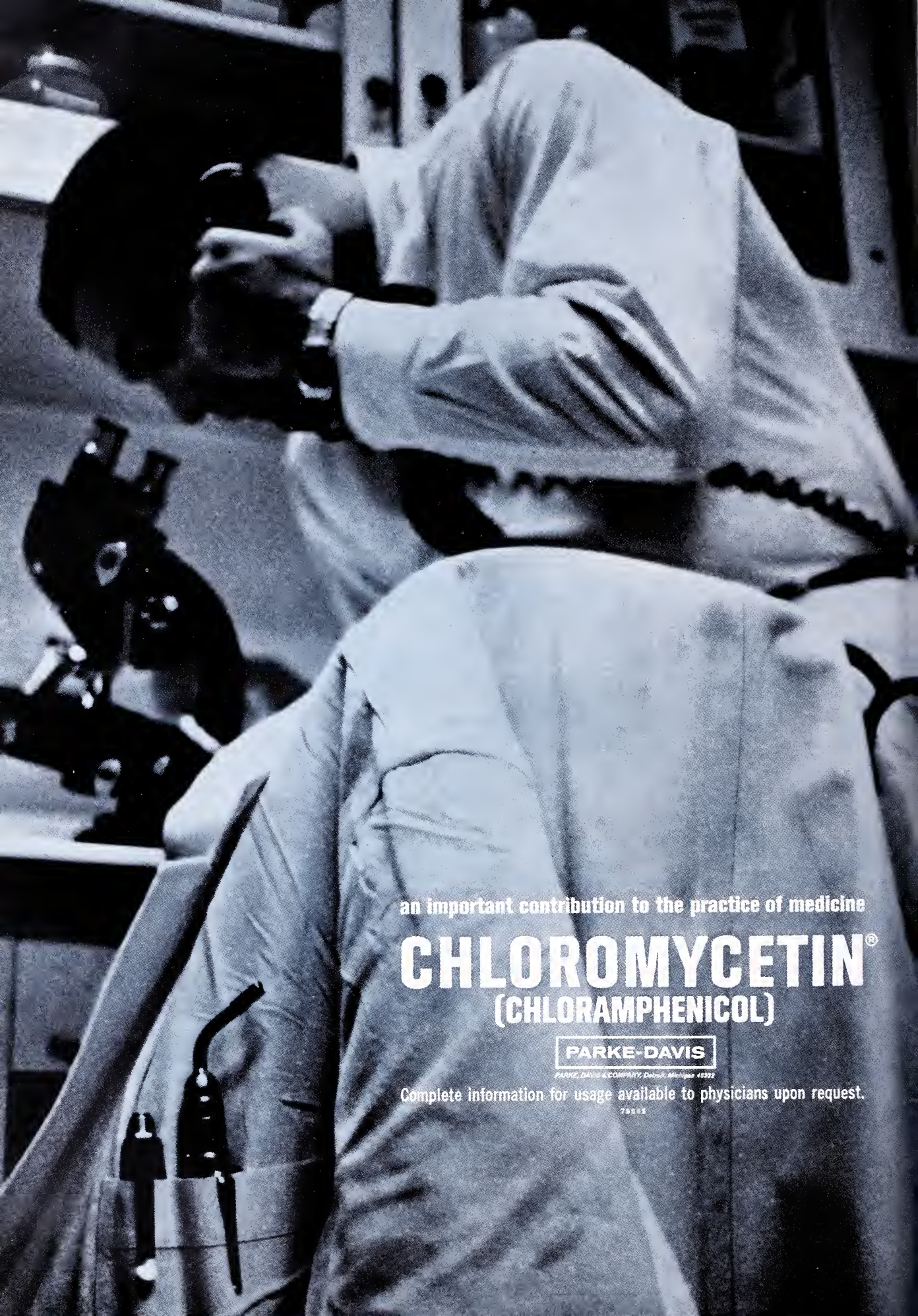
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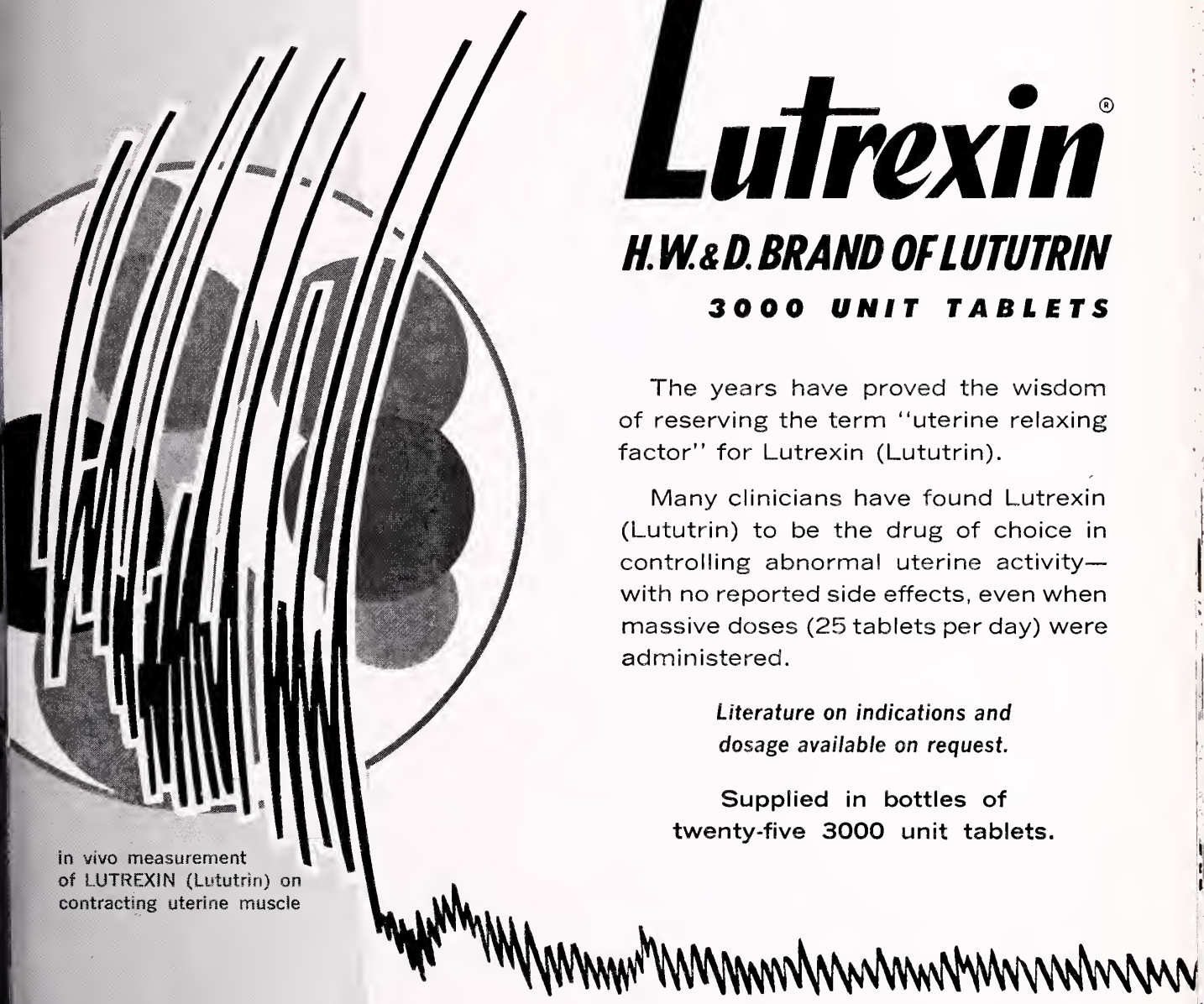
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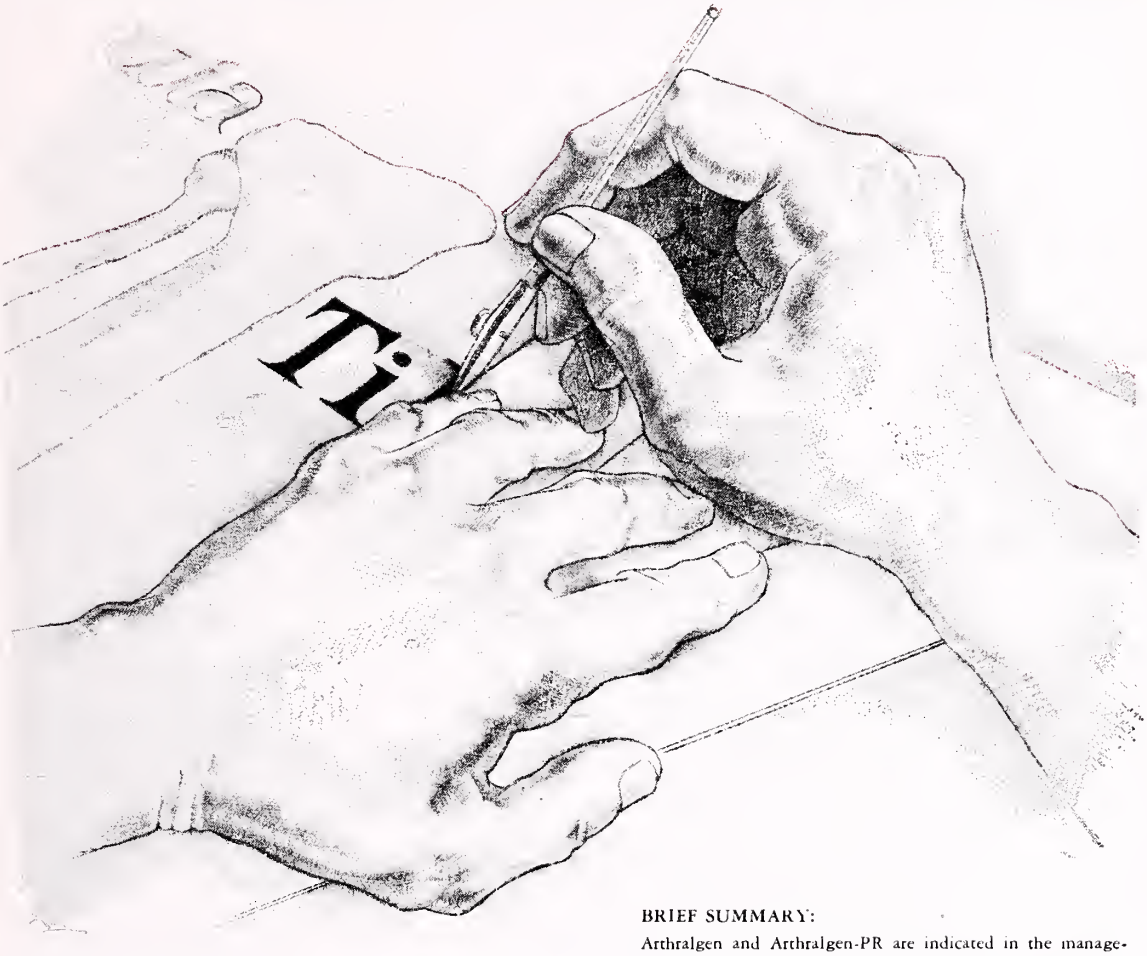
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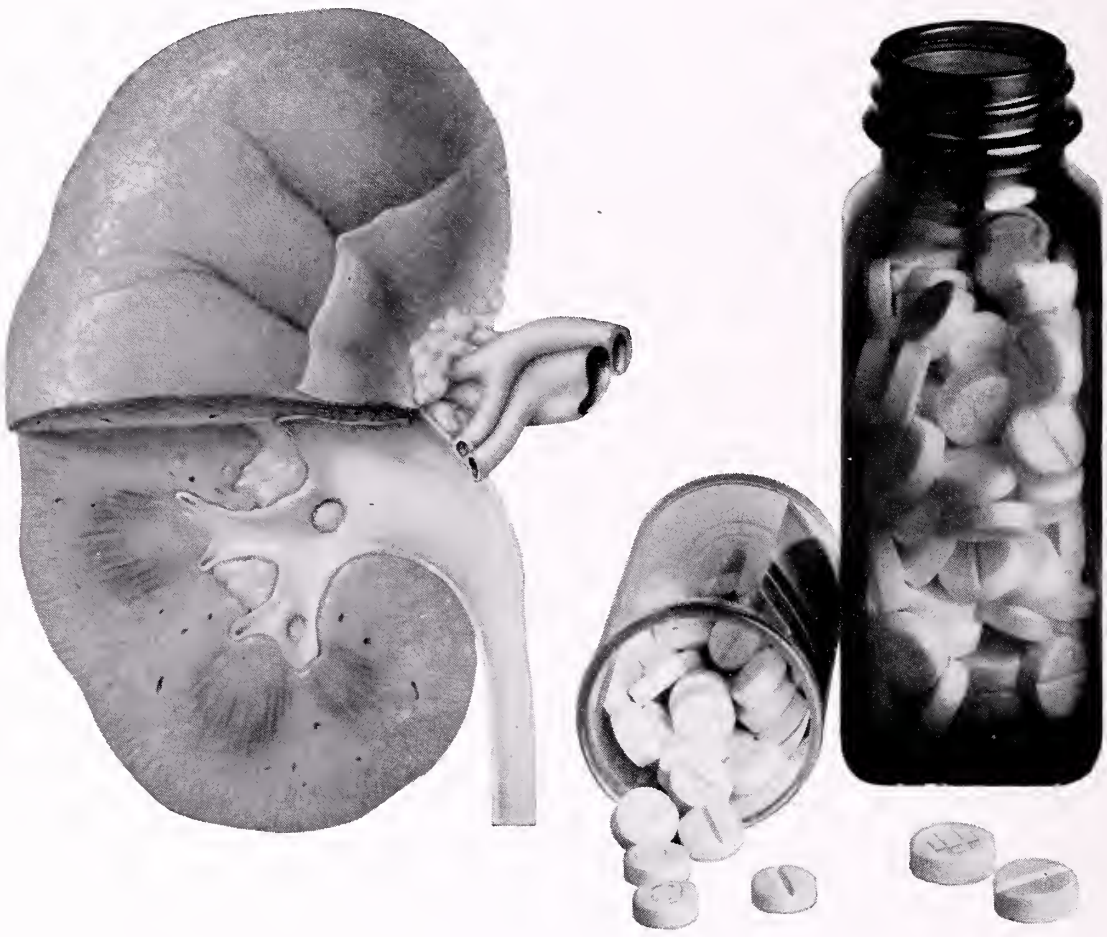
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REF: 1. Boreus & Sandberg, ACTA. PHYSIOL. SCAND., 28:266, 1953.

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The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

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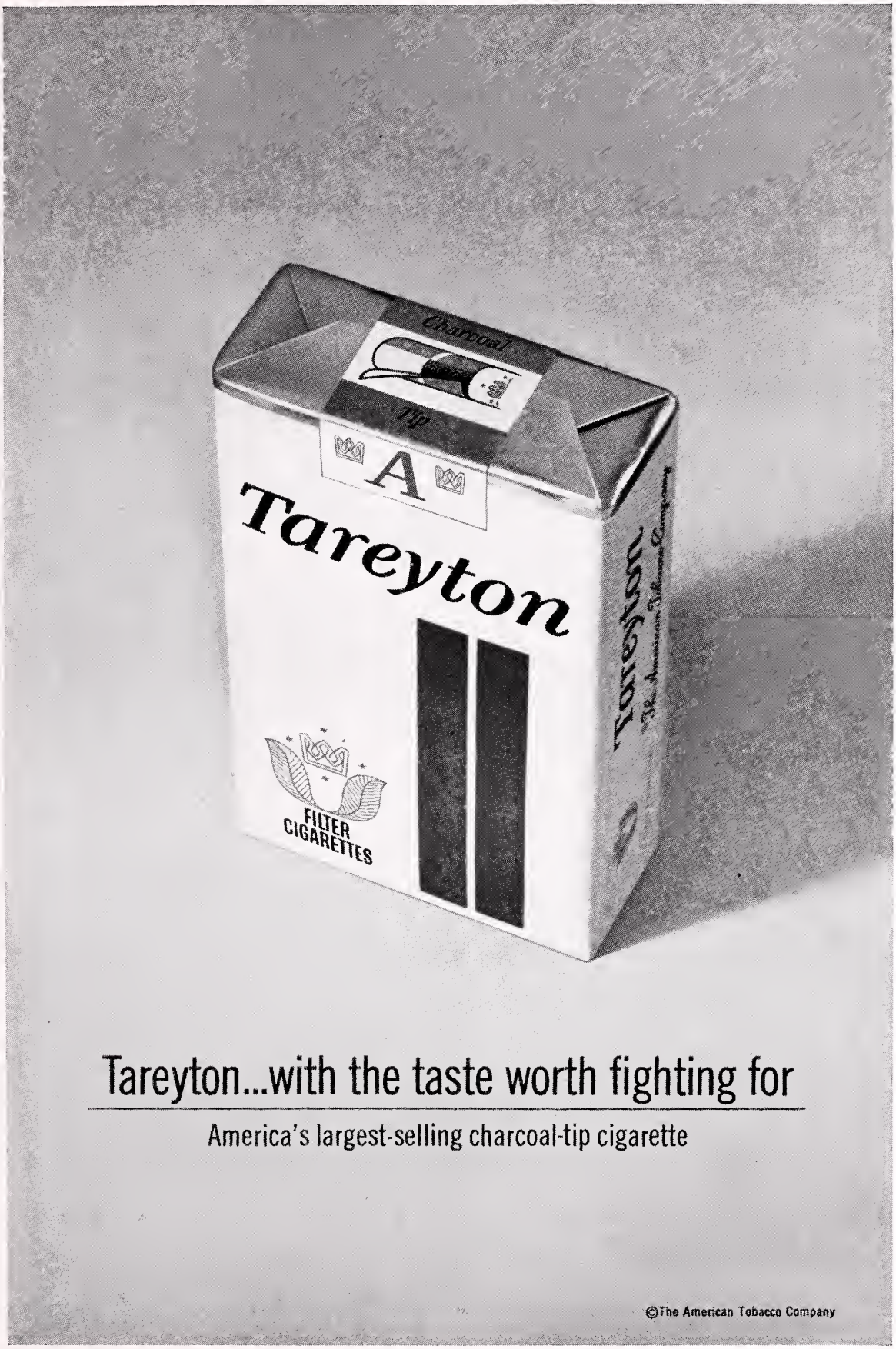
• From knowledge thus acquired might come clues to the development of new therapeutic agents of significant value to the physician.

For example, the Renal Research Program put fifteen years into this search before chlorothiazide became available. But because these years had first led to a greater understanding of basic problems, the desired criteria for chlorothiazide existed before the drug was developed.

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References: 1. Goldsmith, J. W.: Minn. Med. (Feb.) 1957. 2. Groskloss, H. H., Clancy, C. L., Healey, E. F., McCann, W. J., Maloney, F. D., Loritz, A. F.: Clinical Medicine (Sept.) 1955. 3. Codling, J. W., Lowden, R. J.: Northwest Med. (March) 1958. 4. Bethea, R. C.: International Record of Med. (May) 1960. 5. Lenz, W., Second International Conference on Congenital Malformations, N. Y., N. Y., (July) 1963.

Side effects: the incidence of drowsiness and other atropine-like effects is low. However, caution patients engaged in activities where alertness is mandatory.



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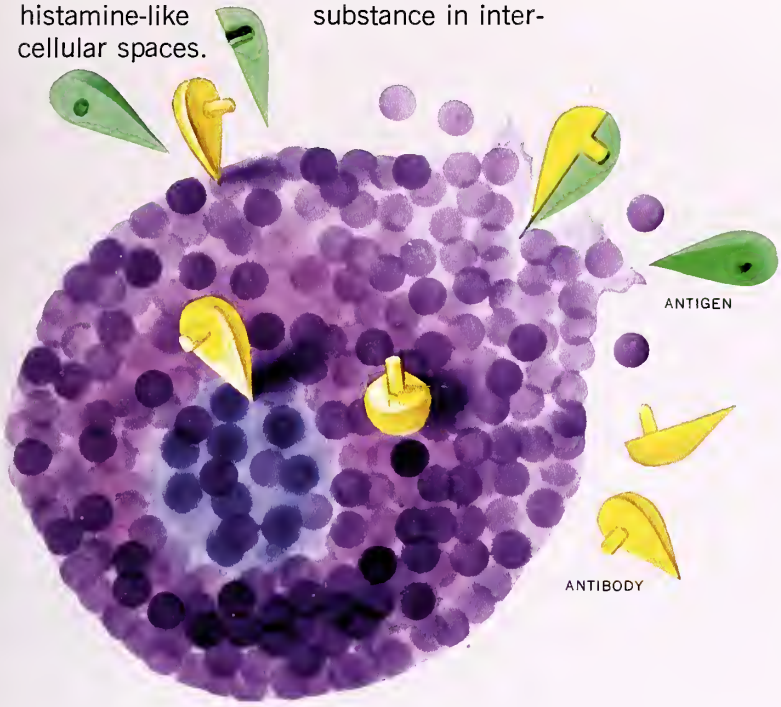
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*Schiller, I.W. and Lowell, F.C.: New England J. Med. *261*:478, 1959.

BRIEF SUMMARY: *Contraindications:* Hypersensitivity to antihistamines. Not recommended for use during pregnancy. *Precautions:* Until response is determined, patient should be cautioned against engaging in mechanical operations requiring alertness. *Side Effects:* Hypersensitivity reactions, including skin rashes, urticaria, hypotension, and thrombocytopenia have been reported rarely. Occasional transitory drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered. *Other dosage forms available:* conventional tablets (4 mg.); Elixir (2 mg./5 cc.); Injectable (10 mg./cc. ampuls, and 100 mg./cc. in 2 cc. vials).

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(methocarbamol 750 mg.)

(CAPSULE-SHAPED TABLETS)



It has been noted that low-back disorders frequently "...are caused by truly mechanical conditions which yield to conservative treatment."[1] Basic to this conservative treatment are bed rest, a board for the bed, and applied heat. In addition, a good muscle relaxant is often helpful, as "...muscle relaxants are useful in chronic as well as acute low backaches."[4]

Robaxin (methocarbamol) has relieved spasm and pain in cases where the patient "had not responded to conservative measures prior to drug therapy."[6] A 100-patient study showed that Robaxin provided greater relief of muscle spasm for a longer period of time without adverse reactions "than any other commonly used relaxants...."[6]

A well-tolerated[7] skeletal muscle relaxant with "specificity of action,"[7] methocarbamol leaves normal muscle tone unaffected. Moreover, there is little likelihood of sedation[7]—a considerable advantage for the patient who must remain active and alert on his job.

Significantly, clinicians advise using a muscle relaxant "early and in adequate dosage."[8] In this regard, Robaxin (methocarbamol)—*particularly in the 750 mg. dosage (2 tabs. q.i.d.)*—offers optimal therapeutic benefits without a significantly increased incidence of side effects. And just as it works well as part of the basic regimen for low-back pain, so also does Robaxin (methocarbamol) often provide muscle relaxation in such conditions as musculoskeletal injury, chronic neurological disorders, and orthopedic situations.

BRIEF SUMMARY—Robaxin (methocarbamol) Tablets: Contraindicated in hypersensitive patients. Side effects (light-headedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently.

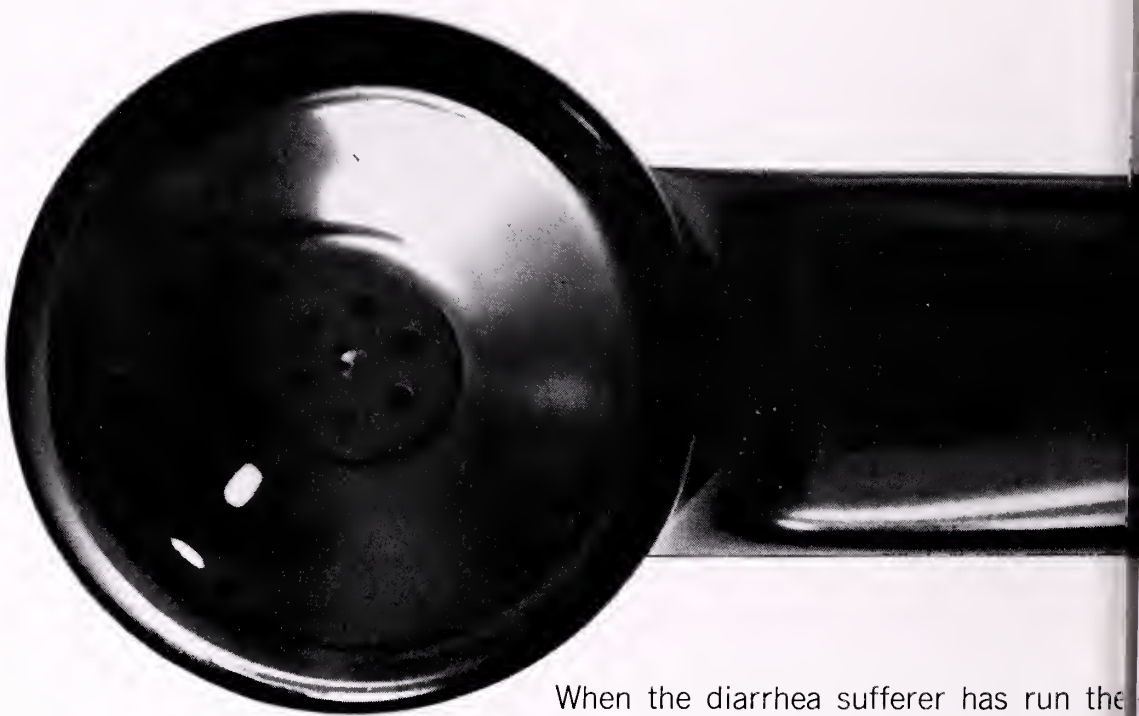
ALSO AVAILABLE: Robaxin® Tablets (methocarbamol, 500 mg.) Robaxin Injectable (methocarbamol, 1 Gm./10 cc.)
Robaxisal® (methocarbamol with aspirin) and Robaxisal-PH Tablets (methocarbamol with Phenaphen®).

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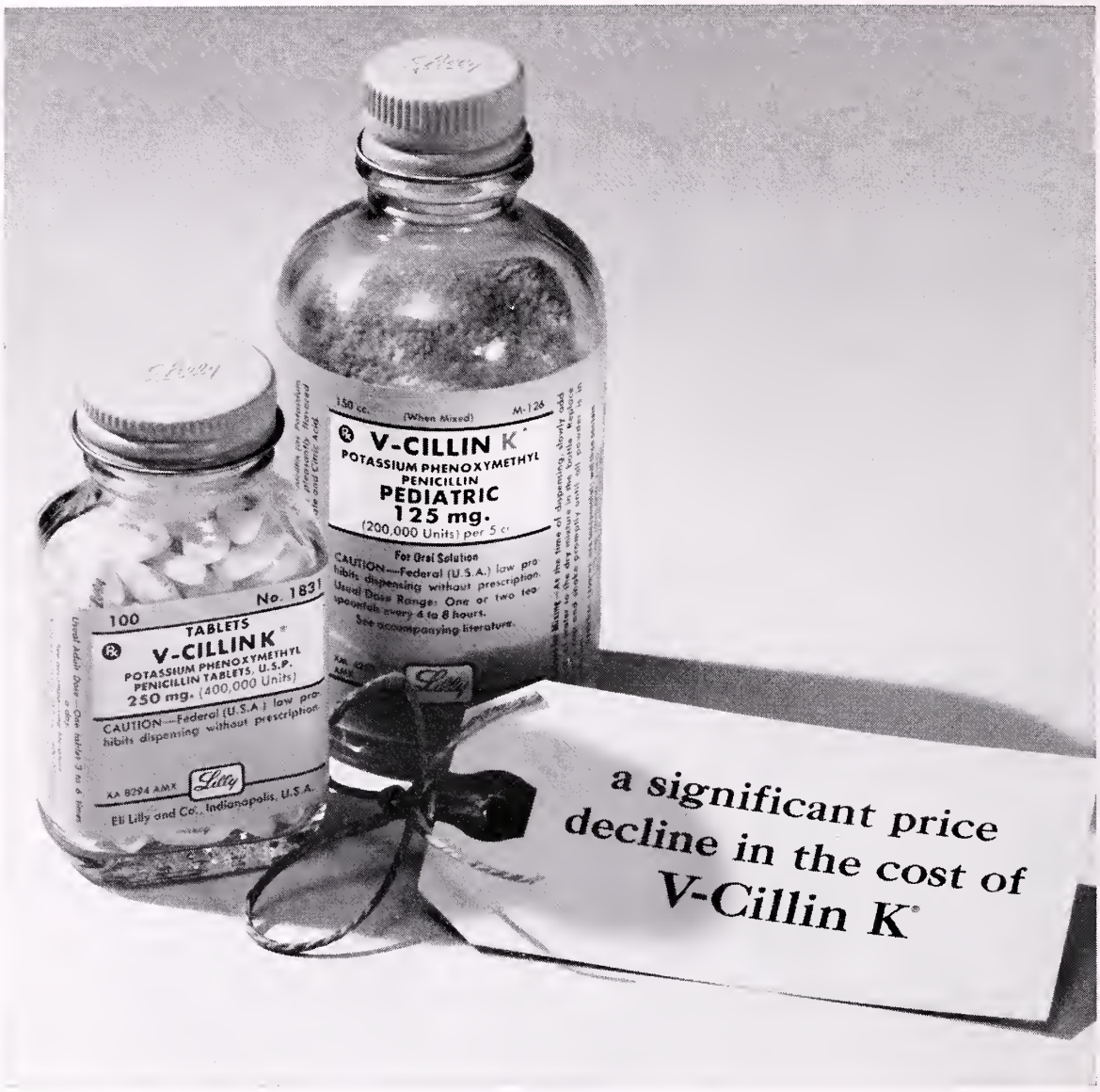
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Congenital Diabetes Mellitus: A Case Report

By

John T. Tidd, M.D.* and
Willis F. Stanage, M.D.**

Diabetes mellitus occurring in the first four weeks of life is a rare entity. In contrast, 5% to 8% of all cases of diabetes mellitus begin in childhood. Almost 100 cases have been reported in infants under 1 year of age[1, 2] although the younger the infant, the lower the incidence of this disorder. Congenital diabetes mellitus is the term we have used arbitrarily to designate the appearance of this disorder within the first month of life. This article reports the case of a newborn female infant in whom diabetes mellitus manifested itself at 20 days of age and was associated with meningitis.

In addition to our case, the literature contains reports of 22 cases although the diagnostic criteria are subject to doubt in some instances. In Table I these reports are summarized, and have been divided into 3 groups: (1) those infants who had transient diabetes from which they apparently recovered completely; (2) those infants who developed a permanent diabetic condition which required insulin for control; and (3) those infants who died, usually rather abruptly. Thus those in the third group could not be observed and examined repeatedly over an extended period in order to distinguish between the permanent and transient diabetic states. There are 12 cases in the first group, 3 cases in the second group, and 8 cases including our own in the third group.

Report of a Case: A female infant was born to a 15 year old white girl on 5/1/63 by spontaneous vaginal delivery following a full term pregnancy. At birth, the infant was active and responsive; weighed 3,964 gm. (8 lbs. 11½ oz.); and measured 53.3 cm. (21 in.) in length. Her head and chest were each 35.6 cm. (14 in.) in circumference. Her eyes, ears, nose and throat were negative except for a large tongue which protruded from her mouth (Fig. 1). Her heart had a regular rate and there were no murmurs. The lungs were clear to percussion and auscultation. Her abdomen, external genitalia and extremities were negative. Neurological examination revealed a normal response.



Fig. 1. A photograph of the infant showing bilateral breast hypertrophy and the enlarged tongue protruding from her mouth.

The infant's mother, a primigravida, had been hospitalized for six weeks prior to the delivery for treatment of a moderately severe toxemia. She had complained of visual blurring, spots before her eyes, and occasional epigastric pain.

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**Department of Pediatrics, Yankton Clinic, Yankton, South Dakota and Assistant Professor of Pediatrics, University of South Dakota Medical School.

TABLE I
CONGENITAL DIABETES MELLITUS: SUMMARY OF REPORTED CASES

Author	Year Reported	Sex	Age at Onset	Height of Hyperglycemia	Ketonuria	Remarks*
Infants with Transient Diabetes Mellitus:						
Ramsey[3]	1926	M	4 weeks	263 mg%	Not Given	Premature
Lawrence & McCance[4]	1931	F	18 days	600 mg%	Absent	
Nawrocka-Kanska[5]	1952	M	12 days	268 mg%	Present	
Arey[6]	1953	M	13 days	555 mg%	Trace	
Wylie[7]	1953	F	17 days	708 mg%	Absent	Retarded Mentally
Keidan[2]	1953	F	30 days	245 mg%	Trace	
Nelson[8]	1954				Present	
Engelson &	1957	M	5 days	720 mg%	Absent	
Zetterqvist[9]	1957	F	11 days	560 mg%	Absent	
Hutchison, et al.[10]	1962	F	11 days	1,292 mg%	Absent	Epileptic
Hutchison, et al.[10]	1962	F	32 days	800 mg%	Absent	Retarded Mentally
Hutchison, et al.[10]	1962	F	11 days	750 mg%	Absent	Retarded Mentally
Infants with Permanent Diabetes Mellitus:						
Guest[11]	1948	M	9 days	650 mg%	Trace	
Hoffman-Bang[12]	1954	M	3 weeks	844 mg%	Present	
Asservo[13]	1958	F	37 days	988 mg%	Absent	
Infants with Diabetes Mellitus Who Died:						
Kitselle[14]	1852	M	A few days			Lived 6 months
Langstein[15]	1909		7 days			Lived 3 days**
Cuno[16]	1910		15 days	200 mg%	Absent	Lived 15 days
Lewis & Eisenberg[17]	1935	F	At birth	520 mg%	Not Given	Lived 17 days
Limper & Miller[18]	1935	M	9 days	952 mg%	Present	
Devine[19]	1938	F	25 days	542 mg%		
Hickish[20]	1956	M	1 month	1,980 mg%	Trace	Lived 12 days
Tidd & Stanage	1964	F	20 days	1,550 mg%	Absent	Lived 3 days

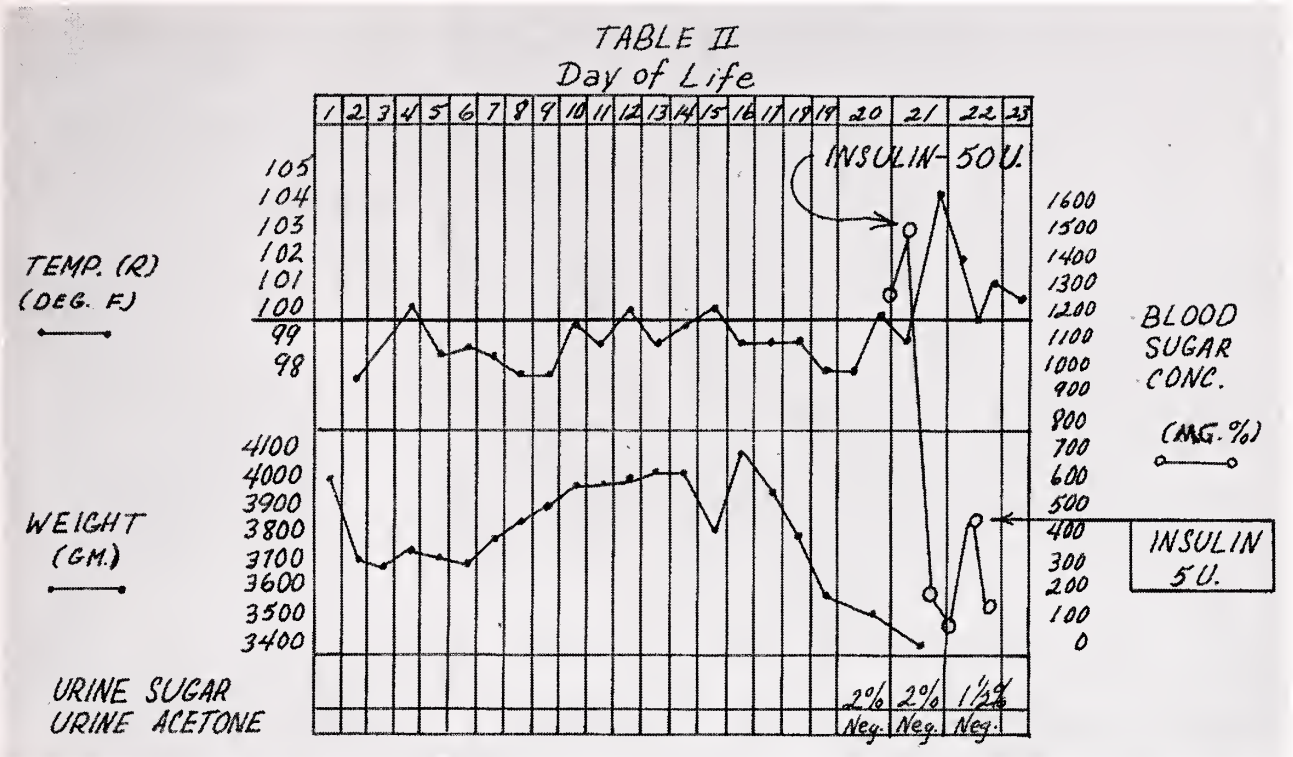
*All patients had glycosuria at some time during their illness. **Anencephalic.

Examination of the mother disclosed moderate hydramnios, slight pretibial edema, and slight albuminuria. The family histories of the mother and father were negative for diabetes. The estimated date of confinement was 4/1/63 so that at the time of birth the infant was about 1 month overdue. The mother was in labor 6 hours and 35 minutes prior to the birth of the infant.

On 5/8/63 because of irritability and a serum calcium of 4.2 mEq/L the infant was given calcium gluconogalactogluconate, but the irritability continued. The enlarged tongue protruding from her mouth interfered with sucking and made feeding difficult. She gradually developed marked enlargement of her breasts. Her physician (W.F.S.) felt that the infant was probably mentally deficient with features of mongolism. A 285 gm. (10 oz.) weight loss was noticed on 5/18/63, followed by continued weight loss on subsequent days (Table II). A urinalysis on 5/20/63 revealed a trace of albumin, 2% sugar, and no acetone. The blood sugar on 5/21/63 was 1,245 mg%. A repeat blood sugar determination later the same day was reported as 1,515 mg% true glucose. The CO_2 combining power was 23.6 mEq/L, and serum potassium was 6.8 mEq/L which was presumably related to dehydration and slight acidosis.

The infant had become markedly dehydrated by 5/21/63, and developed a generalized convulsive episode with nystagmus and slight stiffening of her arms and legs. She was given intravenous fluids and 50 units of regular insulin; the blood sugar promptly declined to a relatively normal range (103 mg% to 205 mg%). However, she continued to have generalized convulsions, ran a fever up to 40.2°C.(R) (104.4°F.) and vomited. Phenobarbital was given for the convulsions, but the convulsions continued intermittently, and she continued to have an elevated temperature. On 5/22/63, her blood sugar rose to 470 mg%, but a dose of 5 units of regular insulin resulted in a decrease of the blood sugar to 139 mg% that afternoon. The infant died on 5/23/63 following an episode of almost continuous convulsions.

Autopsy Examination: Postmortem examination was performed about 3 hours after death. The body weighed 3,700 gm. A grossly enlarged tongue protruded from the opened mouth. The breasts were moderately enlarged and firm with slight secretion expressible from the nipples. The external genitalia were not remarkable. A



slight umbilical hernia was present. The heart which weighed 38 gm., was hypertrophied and dilated. No malformations were present. The right lung weighed 38 gm., and the left, 33 gm. The lungs were markedly edematous; contained prominent collections of macrophages in the alveoli; and had areas of atelectasis. There was no appreciable fluid in any of the serous cavities. The pancreas weighed 5 gm. The islets were often ill-defined, sometimes lacking the usual orderly arrangement. There was moderate congestive hepatomegaly. The thyroid, thymus, adrenals, spleen, biliary system and gastrointestinal tract were not remarkable except for passive hyperemia.

The right kidney weighed 15 gm. and the left, 12 gm. The capsules stripped with slight difficulty revealing red-pink, finely granular surfaces exhibiting lobular markings. The cortices averaged 0.5 cm. in thickness, and the corticomedullary junctions were indistinct. The pelves and calices were moderately dilated and had wrinkled, red-gray, somewhat roughened linings. Many of the glomeruli, but by no means a majority, showed either thickening and fibrosis of Bowman's capsule or focal nodular hyalinized areas replacing parts of the glomerular tuft. The epithelium lining the tubules was often swollen and granular, and there were occasional casts in the tubular lumina. The ureters were tremendously dilated and distended along their entire length by urine. The ureteral and urethral orifices in the urinary bladder were patent, and the urinary bladder was not remarkable.

The scalp and cranial bones were not unusual. The brain weighed 450 gm., and exhibited flattened gyri and narrowed sulci. In the subarachnoid space, there was a gray-yellow exudate most marked over the cerebral hemispheres and at the base of the brain. This exudate was composed mainly of polymorphs and to a lesser extent, of mononuclear leukocytes (Fig. 2). In the matrix of the cerebral hemispheres there were scattered focal hemorrhages beneath the ependyma as well as many engorged vascular spaces. Also the choroid plexes contained hemorrhages. The left lateral venous sinus was distended by a firm mass of clotted blood attached to its wall. The cerebral arteries were patent and intact. The pituitary gland weighed 0.3 gm., and measured 0.5 cm. in the greatest diameter.

Discussion: In our case the appearance of a diabetic state was coincident with the development of a severe suppurative meningitis associated with thrombosis of the left lateral cranial sinus. Terminally the infant developed congestive cardiac failure. In many of the case reports the infants were hospitalized initially because of some type of infection, usually in the upper

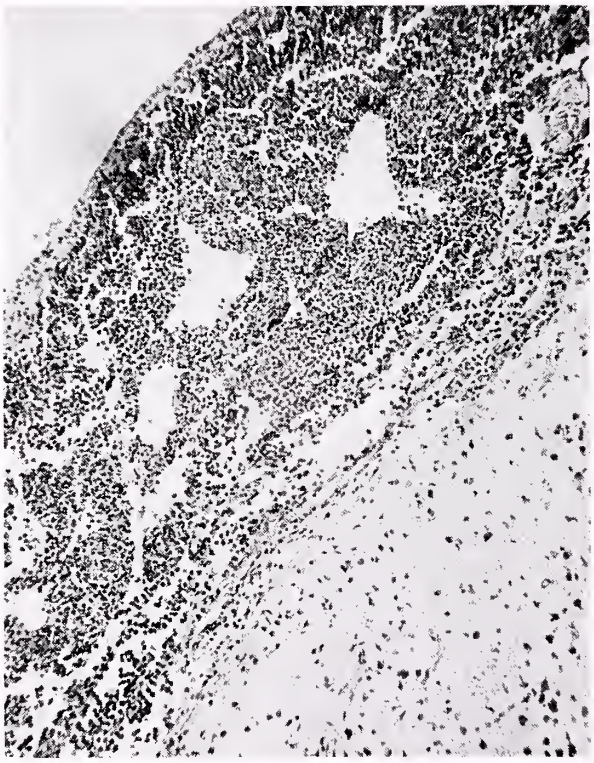


Fig. 2. A photomicrograph of the brain exhibiting an acute inflammatory exudate in the meninges covering the right cerebral hemisphere.

respiratory tract. However, Keidan[2] in considering the transient cases of diabetes felt that there was very little etiological evidence to suggest an infective basis or a delayed manifestation of an intra-cranial birth injury.

The lesions seen in the renal glomeruli were scattered rather than generalized representing fetal glomerulosclerosis, a normal developmental finding in humans. Congenital defects in the musculature and/or innervation probably represent the basis for the marked bilateral hydronephrosis and hydroureter since no obstructive lesion in the urinary tract could be demonstrated. In reviewing the postmortem descriptions of the pancreas, no consistent pathology has been reported in the islets; some have been enlarged, some reduced in size, some fibrosed, and others normal. In our case the changes in the islets were not marked.

Our case revealed evidence of mental deficiency and showed features of mongolism such as brachycephaly, epicanthus, protruding tongue, dry skin, poor muscle tone, and short

The authors wish to thank Dr. Earl Scott, University of South Dakota, for making the photomicrograph for Fig. 2.

TABLE III
SUMMARY OF ANATOMICAL DIAGNOSES

1. Meningitis, acute, suppurative
   a. Thrombosis, left lateral cranial sinus
   b. Hemorrhages, choroid plexes and cerebral hemispheres, focal
2. Edema, lungs, marked
   a. Hypertrophy, heart, marked
   b. Hyperemia, viscera, passive
3. Malformation congenital urinary tract; hydronephrosis and hydroureter
4. Macroglossia
5. Hypertrophy, breasts, moderately marked

incurved 5th finger. Interestingly, the patients reported by Wylie[7] and Hutchison et al.[10] revealed mental retardation, and one infant later developed epileptic seizures.

Lawrence and McCance[4] held that the following criteria were essential to the diagnosis of neonatal diabetes mellitus: (1) the infant showed diabetic symptoms and a glycosuria exceeding 2% or (2) a recurrent hyperglycemia above 200 mg%. Using a precise clinical analysis, they felt they could reject several of the congenital cases because of incomplete investigation i.e. Kitselle (1852)[14] and Langstein (1909).[15]

Joslin et al. [21] have questioned the diagnosis of diabetes if the diabetic condition was cured. However, Nelson[8] describes a diabetes mellitus syndrome in the newborn which may be transient and consists of hyperglycemia, glycosuria, clinical control with exogenous insulin and absence of marked ketosis. The absence of ketosis especially in the transient cases in spite of an often excessive hyperglycemia is noteworthy. It points up the observation that a newborn infant seldom reacts with ketosis. On the other hand, when acetone is present in the urine, it does not seem to be correlated with the degree of hyperglycemia or the severity of the condition.

Our patient revealed responsiveness to insulin, and this is an important feature of most cases of congenital diabetes mellitus. In fact the transient cases appear to have little need for insulin, and Keidan[2] questions if it is really necessary. Also Keidan insists that it is absolutely necessary to determine that the reducing substance found in the urine, blood and/or cerebrospinal fluid be identified as glucose before the diagnosis of diabetes mellitus can be substantiated.

Engelson and Zetterqvist[9] in their report felt that one of their cases as well as those described by Keidan,[2] Ramsey,[3] and Arey,[6] were ex-

amples of postmaturity related to placental dysfunction.

Summary: As Keidan[2] and Hutchison et al.[10] have emphasized, the urine from every sick infant should be examined in order to detect diabetes mellitus. The diagnosis has been delayed or missed by failure to think of the possibility of this condition in an infant. In the case reported, the diagnosis was established antemortem and prompt treatment instituted. However coincident suppurative meningitis and lateral sinus thrombosis resulted in a fatal outcome.

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"BOOK REVIEW"

"Surgery of the Biliary Passages and the Pancreas" by the Swiss surgeon Doctor Walter Hess, as translated from German by Doctor Heinrich Lamm, of Harlingen, Texas, is the most complete text on the subject that I have seen. It is easy to read and understand. The many pictures and diagrams enhance its value to the experienced surgeon and student alike. I highly recommend it to both.

This comprehensive book of 617 pages is based on the author's experience with 1,654 patients and his studies in the Literature plus his 16 years of work in the research laboratory. It is probably the most outstanding book on the subject that has been printed.

His discussions of Cholecystocholangiography, Cholangiomanometry, Endoscopy of the biliary passages, and x-ray visualization of the Pancreatic Duct systems are excellent. The whole book gives evidence of the author's primary interests in the patient on the operating table and the complications that can follow such surgery. As a consequence, a few discussions of preoperative conditions such as Gas Gangrene of the Gall Bladder, and Hepato-renal Coma with Anuria are slighted or omitted. In spite of this, it is an exhaustive work that should be in every surgeon's possession for ready reference.

Hess, Walter: Surgery of the Biliary Passages and the Pancreas. Princeton, N. J., Van Nostrand Co., Inc., 120 Alexander St., 1965. 617 pp. $25.00.

G. I. W. Cottam, M.D.

MINUTES
SPECIAL COUNCIL MEETING
CONFERENCE CALL — AUGUST 2, 1965

The special conference call meeting was called to order at 3:45 p.m. by Chairman, John T. Elston, M.D.

The following Officers and Councilors were present for roll call: Drs. J. T. Elston, P. Hohm, J. P. Steele, P. P. Brogdon, J. J. Stransky, A. P. Reding, E. J. Perry, G. Robert Bartron, M. C. Tank, E. T. Lietzke, A. J. Tieszen, H. Lewis, E. P. Sweet, E. A. Johnson, F. Leigh, and Richard Erickson.

Dr. Tank moved that we dispense with the reading of the minutes of the previous meeting. Seconded by Dr. Hohm and carried.

Dr. Hohm moved that the Council approve of the feasibility study concerning the medical computer system for the state of South Dakota. Motion seconded by Dr. Tank and carried.

Dr. Perry nominated Drs. M. C. Tank, J. P. Steele, and Fred Leigh to the Board of Directors of the South Dakota Health Research Institute, Inc. Dr. Brogdon moved that nominations cease and that a unanimous ballot be cast for the three named physicians. Motion carried.

Dr. Bartron moved that the Association expend $250.00 as their portion of the initial expense for costs involved in setting up the nonprofit corporation. Dr. Lewis seconded the motion and it was carried.

Dr. Tank moved that the meeting adjourn. Seconded by Dr. Perry and carried. Meeting adjourned at 4:30 p.m.

Stroke Rehabilitation

By

Gordon M. Martin, M.D.*
Rochester, Minnesota

Two significant events in recent months have served to alert the medical profession and the general public to the importance of practical rehabilitation for the stroke patient. At the First National Stroke Congress, in October 1964, many facets of the stroke problem were analyzed and discussed. The increasing incidence of stroke syndromes and the importance of exploring various aspects of prevention were considered. However, the major emphasis of the Stroke Congress was on the more general use of effective programs for treatment and rehabilitation. In December 1964 the President's Commission on Heart Disease, Cancer and Stroke, with Dr. Michael DeBakey as chairman, reported to the President and secondarily to all of us on a prospective "National Program to Conquer Heart Disease, Cancer and Stroke."[1]

The President was told that, "Stroke has been for many years a tragically neglected disease. The health professions have shown little interest in it; the public has accepted it with resignation." The extent of the stroke problem, reasons for maintaining an optimistic attitude toward it, and recommendations for a positive approach to meet the needs were considered in this report. The questions of costs and the need for added large numbers of specially trained personnel in medical and ancillary fields was pointed out. A long-range program for the development of special centers for treatment, research, and teaching was proposed.

It was pointed out to the President that in 1963 about 201,000 Americans died of strokes. About 80% of the stroke deaths occurred in persons 65 years of age and older (Table 1), while more than 38,000 (20%) of the stroke victims were less than 65. At least 2 million persons now alive in the United States have suffered a stroke. Eight of 10 stroke victims survive the acute initial phase, and most of them live for several years thereafter. Many are untreated and neglected; they may vegetate at home or in state hospitals and nursing homes. Much of the distress of the survivors could have been obviated by the timely application of preventive or rehabilitative treatment. It has already been shown that the incidence of strokes can be definitely decreased by recognition of the prodromal symptoms and institution of indicated therapy for hypertension or occlusive pre-stroke symptoms. The Commission's report emphasized that it is imperative that this disease be brought into the mainstream of medical and scientific attention in order that new knowledge can be developed and present knowledge can be more widely applied. The Commission pointed out that, in meeting the problems,

> The physician is the most critical single resource — there must be enough doctors in the community and their medical knowledge must be up to date. Moreover, they must be supported by a wide range of well-trained assistants . . . . There are not enough doctors and not enough supporting people . . . . In addition there is a serious shortage of facilities for the care of chronically ill patients . . . . Stroke has been a seriously neglected area of study in the past. This neglect has been based largely on the false assumption that stroke was a hopeless disease . . . . Recently, there have been substantial advances in knowledge which indicate that many — perhaps most — strokes are foreseeable and preventable, and that much can be done for stroke victims.

TABLE 1
Stroke Victims

	United States	South Dakota
Total surviving	2,000,000	7,500
Deaths, 1963[2]	200,000	800
Deaths/100,000, 1963	107	108
Hospital discharges, 1963	283,000	1,100

Eight of every ten stroke victims survive initial phase.

It is recommended that more funds be made available for the extension of long-term care facilities affiliated with hospitals. Regarding

* Mayo Clinic and Mayo Foundation: Section of Physical Medicine and Rehabilitation.

Read at the meeting of the South Dakota State Medical Association, Watertown, May 17, 1965.

the proposed development of a national network of centers for patient care, research, and teaching, the report states:

> It is designed to become a part of the existing fabric of medical services. Existing universities, community hospitals, and research institutes will be focal points for the centers and stations proposed . . . . The purpose of the entire system is to assist the doctor in practice in the care of his patient . . . .

Practical Rehabilitation in the Community Hospital

Our immediate concern is what can be done today in practical rehabilitation for the stroke patient in his own community hospital. Although we can contemplate better results for more patients in the specialized treatment centers proposed for the future, the stroke victim of today deserves our best efforts also. Even today we have treatment procedures that permit reasonably successful rehabilitation of a large percentage of stroke patients. Rehabilitation involves the treatment and training of the patient so that he may attain his maximal potential for normal living — physically, mentally, socially, and vocationally.

Fortunately, the facilities for physical treatment and rehabilitation are becoming increasingly available to patients seen in general medical practice. Most new or expanding hospitals and clinics are making provisions for adequate space and equipment and are attempting to recruit essential personnel in order to provide service in these important areas of medical care. At present South Dakota has a nucleus of 34 qualified physical therapists for 50 to 60 hospitals to assist physicians in physical treatment and rehabilitation procedures. To be sure, this is a low ratio of physical therapists to the number of patients needing treatment and rehabilitation, but it is a beginning.

Although successful rehabilitation of many stroke patients can be accomplished in the community hospital, frequently it is advisable to transfer a severely involved patient to some other hospital or to a rehabilitation center. The institution selected should have special areas and organization, including the necessary equipment and the physicians, nurses, and paramedical personnel with special training and experience in essential rehabilitation procedures. Unfortunately, a physical therapist working alone or with an aide in a small physical therapy department in an average community hospital cannot be expected to provide adequate rehabilitation services for all extremely handicapped and disabled stroke patients.

Until very recently, many physicians held a nihilistic view toward prolonged treatment and rehabilitation of the hemiplegic patient. A serious mistake too often made during these days of emphasis on rapid turnover in the use of hospital beds is that many hemiplegic or other stroke patients are sent home from the hospital just at the time their general condition permits undertaking an intensive rehabilitation program. Their further recovery is left to a somewhat pessimistic watch-and-wait attitude on the part of the patients, their families, and the physicians. These patients all too frequently remain nursing-care problems with supportive treatment based only on a few suggestions from a visiting nurse or from the fumbling efforts of relatives to follow the directions of the standard Public Health Service* and Kenny Rehabilitation† booklets, which, although of proved value, do not provide the answers by themselves. The rehabilitation of the hemiplegic patient in the home is too complex for the average family, who understand little of the handicap and what should be done about it. Similarly, even the best nursing home cannot be considered a rehabilitation center.

The physical treatment and rehabilitation of the hemiplegic patient should begin within the first week after the stroke and be continued on a regular, supervised, intensive basis as long as progress is being made. Personnel in the community and local hospitals can be trained to contribute a share in the rehabilitation program (Table 2). It has been estimated that up to 80% of stroke patients can be relatively well rehabilitated; they can become independent and are usually able to walk in 4 to 8 weeks after a stroke. Often before the end of the first week after a stroke the patient can learn to use a wheelchair and to feed himself and perform much of his own bodily care with the use of his normally functioning arm and hand. The morale of these patients remains higher if early

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*"Strike Back at Stroke," distributed by American Heart Association, New York, New York.
*"Up and Around," Public Health Service, Washington, D. C.
†"Homemaking Aids for the Disabled," and "Rehabilitative Nursing Techniques." The latter is a series of booklets recently made available also in a single, hardcover version, **A Handbook of Rehabilitative Nursing Techniques in Hemiplegia**, Kenny Rehabilitation, Minneapolis, Minnesota.

TABLE 2

The Rehabilitation Team

Specialized Center	Community Hospital
Referring physician	Patient's physician
Internist	Nursing staff
Neurologist	Patient's clergyman
Physiatrist	Physical therapist
Other specialists, as needed	Insurance agent
Nurses and aides	Patient's relatives
Speech pathologist	Patient's employer
Speech therapist	
Physical therapists	
Occupational therapist	
Social service worker	
Psychologist	
Vocational counselor	
Chaplain	

TABLE 3

Community Hospital as Primary Treatment and Rehabilitation Center: Program

1. Initial emergency evaluation and diagnosis
2. Early care and medical management
3. Specialized nursing care for stroke patient
4. Preliminary consultation with relatives
5. Preliminary conference with patient's clergyman
6. Prescription for physical treatment and supports
7. Progression of treatment and rehabilitation program
8. Planned transition to home or other facility

TABLE 4

Principles of Stroke Rehabilitation

1. Institute rehabilitation efforts early
2. Maintain reasonable optimism and assurance
3. Keep patient moving while he is in bed
4. Encourage self help in eating and bathing
5. Have patient out of bed as soon as possible
6. Encourage early use of wheelchair and toilet
7. Provide facilities and personnel for gait training
8. Instruct relatives in their role in rehabilitation

and active efforts are made in getting them out of bed and starting a positive treatment program. The rapid deterioration of patients who are kept bedfast for even relatively short periods of time is becoming generally recognized.

The physical therapy department of a small hospital may not have all the facilities of a larger hospital or rehabilitation center, but most physical therapists can do a creditable job in physical rehabilitation of the stroke patient if they have the aid of an understanding and guiding physician plus a good nursing staff. A problem that often presents itself, however, is that a lone physical therapist is burdened with too many patients and is not able to devote adequate attention to each one. As a result, the older hemiplegic patient is often neglected and unfairly considered to be a chronic case and not a good candidate for rehabilitation.

The Program of Stroke Rehabilitation

A brief outline of the general plan for care and rehabilitation of the average stroke patient is outlined in Table 3. Some essential steps in rehabilitation efforts are indicated in Table 4. In early care, the proper positioning of the patient and the use of a foot board or simple spring-wire foot-drop splint help prevent development of a tight heel cord. Early passive exercises of the involved extremities can usually be started 3 or 4 days after the stroke. As function returns, assistive exercises are undertaken. Generally during the early treatment, particularly if the patient has had a completed stroke, the patient can achieve standing balance with the aid of temporary splinting for the paralyzed leg. This can be accomplished with an inexpensive aluminum gutter splint and an elastic foot-drop support. Assisted walking in parallel bars is undertaken as soon as the patient is able to flex the involved leg or hike the hip and has an adequate sense of standing balance. It has been emphasized by Peszczynski[3] that standing and walking practice should be undertaken many times a day and not just at a single treatment session.

The nurses, nurses' aides, and orderlies should early encourage and help the patient learn to feed himself, to care for his bodily needs, to dress and bathe himself, and to move from bed to wheelchair and from wheelchair to toilet with minimal assistance. Although a urinary catheter may be needed for the first few days after a stroke if the patient is semi-comatose, generally as the patient becomes cooperative and aware of this problem he can soon relearn satisfactory bladder and bowel function. However, we should remember that the toilet or commode is a better training ground than the bedpan. Most hemiplegic patients, although they may have little or no return of function in the upper extremity, can generally learn to walk with a four-legged glider cane and eventually a regular cane plus a short leg brace. A patient with minimal spasticity in the lower

extremity can function with a simple spring-wire brace, while patients with spasticity and muscle imbalance may require a double-iron or single-iron brace with a right-angle ankle stop.

By way of an example, we recently dismissed a 69-year-old hemiplegic patient from an intensive program of physical rehabilitation. Immediately after his stroke he had been hospitalized in a small community hospital which had no personnel or facilities for rehabilitation. Two weeks after his stroke he was dismissed to his home, where he remained a bed patient and nursing-care problem with essentially complete left hemiplegia. After he had been at home 2 weeks, the family realized that he was regressing rather than progressing. He was then hospitalized in a larger community hospital where physical therapy was available. His physical therapy consisted only of passive exercises to the paralyzed extremities given once daily. During a 2-week period he had been helped to stand in parallel bars on only two occasions. Six weeks after the stroke he was transferred to a larger hospital which had the equipment and facilities for an intensive rehabilitation program. At this time he was still bedridden. He had sat up on only a few occasions. He required an indwelling catheter and had partial incontinence of the bowels.

A program was started of increased periods of time out of bed daily. Standing balance was first learned on a tilt table. He was encouraged to stand and learn to empty his bladder. Within a week he had full control of his bladder and bowels. Reeducation exercises, twice daily, were then started. When hip flexor and quadriceps power was returning to the left lower extremity, gait training was undertaken in the parallel bars with the use of the gutter splint and foot-drop support plus a sling for the paralytic arm. At the end of 6 weeks of intensive rehabilitation, or 3 months after his initial stroke, this patient was able to walk with a regular cane and short leg brace, care for his own bodily functions, dress himself, and be essentially independent around his home. He had already retired and was content to continue on a retired status at home after the stroke. It is highly probable that had an intensive program of rehabilitation been begun immediately after the stroke he would have achieved the same degree of function and independence with a shorter period of hospitalization and less cost to the family and the insurance company.

Relative to the physical therapy prescription, a progressive type of program should be set up and frequent changes made when this is permitted by returning voluntary muscle control and increasing ability of the patient to cooperate (see Table 5, sample prescription). Initial exercises should consist of passive motion through the normal range performed once or twice daily. Active exercise for the normal side should be encouraged early. When the physician finds evidence of returning voluntary power, he should prescribe reeducation and assistive exercises. If there is no indication of return of voluntary function, excessive effort spent on reeducation exercises may be most frustrating to the patient. Stroke patients frequently need to be helped to develop good sitting balance. Often, spatial orientation is seriously affected, so that sitting balance and holding the head erect as well as standing can present most difficult problems in rehabilitation. Preparation for the erect position can begin by having the patient sitting, adequately supported, in a chair or wheelchair. Later he can be placed on a tilt table gradually approaching a vertical position. If after a month of effort the achievement of practical ambulation appears impossible, emphasis should be placed on wheelchair and transfer activities. Wheelchairs are available that permit the patient to operate both wheels with the normal upper extremity.

Psychometric studies made during the recovery by a psychologist, vocational counselor, or teacher are useful in evaluating intellectual and psychologic defects that may have developed. Once maximal rehabilitation has been achieved, if nursing home care is necessary the personnel in such a home should be instructed in measures necessary to maintain the maximal levels of activity and function achieved during the active treatment. Almost all stroke patients with an early, nearly complete hemiplegia retain a considerable limp and, frequently, marked impairment of function of the upper extremity; the patient and relatives should be gradually prepared to accept this result.

Vocational and social adjustments are largely determined by the intellectual capacities and speech ability plus the general tolerance for activity. Most hemiplegic patients in the young or middle-age groups recover enough stamina for employment in sedentary or even fairly active jobs. Their employability may be limited to one-handed work in places where an occasional slight loss of balance in walking is not hazardous

TABLE 5

Sample Prescription for Physical and Occupational Therapy for Stroke Patient[4]: Left Hemiplegia (Onset on January 26)

Date	Treatment	Time, minutes	Specifications
2-1	Exercise Passive	10	Left upper and lower extremities through normal range, 3-4 times each joint (remove foot-drop splint for treatment)
2-7	Re-education and coordination Active exercise	20	Left upper and lower extremities Normal range, right upper and lower extremities (avoid fatigue; encourage use of normal extremities for activities of daily living)
2-16	Active and assistive Resistive exercise		Left shoulder and elbow Left hip and knee Powder board with assistance for hip and knee Flexion and extension, and hip abduction and adduction Right quadriceps 30 contractions daily — 10 each of ½, ¾, and full 10 rep. max.*
2-18	Gait training	Twice daily	Parallel bars with knee splint and foot support Sling left arm 1. Standing balance 2. Walking
2-22	Gait	Twice daily	Start on glider cane with assistance (cane in right hand)
3-2	Gait	Twice daily	Walk with regular cane and foot-drop brace
3-6	Gait	Twice daily	Climb stairs, ramp, curbs In and out of chairs In and out of car

2-1 Treat once daily in patient's room
Physician check every 3 days
2-7 Treat in physical medicine department twice daily
2-8 Occupational therapy for left hand and arm. Help with activities of daily living
3-4 Instruct in normal-range exercises for home use

*By "10 rep. max." (10 repetition maximum) is meant the number of pounds that can be moved through the full range 10 times.

and in jobs in which a visual-field defect is not too disabling. Impairment of intellect or residual inability to communicate is often the greatest obstacle for suitable placement in employment.

Speech and Communication

A major catastrophe for many stroke victims is the impairment or loss of ability to communicate. One of my associates, Dr. Frederick Darley, speech pathologist, has described several aspects of the disability, and with his permission I have paraphrased parts of his excellent paper that appeared in **Postgraduate Medicine,**[5] which I recommend to those who are interested in a more complete statement of the problem. The stroke patient with aphasia is peculiarly cut off from communication with his friends and family. He usually has difficulties both in understanding language and in its formulation and expression. Both listening and reading may be impaired. He may behave as though he were hard of hearing. When he wishes to say something the words elude him. He gropes awkwardly or perhaps misspeaks, or he may manage no more than an explosive or telegraphic speech or a meaningless jargon which he cannot inhibit or correct. In attempting to write, he forgets how the words should look and gets confused as to how to form certain letters. He misspells and omits words and generally garbles his graphic as well as his oral production. The patient may have verbal apraxia and may lose motor patterns that were once automatic and be unable to recall how to form the words or produce the various sounds of speech. Dysarthria may also complicate the speaking act, and hearing loss or visual defects may raise additional obstacles to easy communication.

The realization that he cannot communicate comes as a severe shock to the stroke patient. His family will be equally perplexed about what

has happened and how it will be resolved. Family responses vary from oversolicitous desire to spare the patient to an overanxious urge to stimulate him to quick recovery; on the one hand he is expected to do nothing, while on the other he is prodded relentlessly to perform in a manner beyond his capacity. All who have contact with the patient should be alert to the psychologic needs and attentive to the fact that he is sensitive to negative expressions concerning his condition and prognosis.

The family needs help in understanding that the patient has not "lost his mind" but that the language symbols are at least temporarily relatively inaccessible to him. They must realize that only through repeated, patient, carefully graded stimulation will his recall of these symbols be fostered. Given some fundamental understanding of the nature of the problem, they will more likely adjust their expectations and adopt a mode of behavior that will foster the patient's language recovery rather than deter it. The family can be further helped by being referred to the useful booklets that are available.*

If professional guidance for language retraining is not available, responsibility for providing help with speech may rest with the family. Many families, if properly instructed, can do much that is helpful without specialized training. The goal of the program is to help him recall with more facility the words that now elude him. The best way to facilitate this recall is to have the patient hear and see the words and practice saying and writing them. The family can provide language stimulation in a variety of ways and thus speed the return of the patient's ability to recall words. Some specially prepared workbooks and kits are available which will offer the family or the instructor suitable materials for adult language stimulation.

The family should be helped to approach this undertaking with an optimistic and encouraging attitude. Each day they should engage the patient in language tasks at which he can succeed, but they should also give him things to do that are somewhat harder and possibly just beyond his ability. More valuable than any particular kind of speech lesson is providing abundant, interesting speech for the patient to hear and try to respond to. It is more important to enrich the input to the patient than to have him struggle to perfect his output.

The physician will discern that it is not always appropriate to ask the family to undertake the language-training program. Sometimes the only relative available to carry out a program may be the spouse, who may also be an aging person perhaps unable to assume the role of teacher and whose anxious and clumsy efforts may only increase the patient's distress. In such cases a volunteer worker or teacher or friend may be found to aid in this program. There will be some patients who are so severely damaged, apathetic, and confused that rehabilitation efforts are judged to be futile. As the attending physician estimates the situation, he should be guided by an awareness that if one errs it should be in the direction of increasing incentive and providing stimulation rather than in neglect and premature acceptance of defeat.

Religion and Stroke Rehabilitation

The patient's clergyman may be a most valuable member of the rehabilitation team. He can provide a ministry to the stroke patient that is meaningful and helpful to all concerned — the patient, the family, and the physician. Most contemporary qualified ministers are trained in psychology, sociology, and counseling as well as in religion and theology. Generally the minister has good rapport with the patient and his family, and they will welcome his services. Usually the minister is ideally suited to provide hope, encouragement, insight, and motivation. In addition, he can assist in areas of the social service worker and psychologist. However, in order to function effectively, the minister and physician should confer early regarding the extent of the stroke, the patient's physical and mental status, and the immediate and ultimate prognosis as well as the goals and plans of treatment.

Chaplain A. L. Toews,[6] an experienced hospital chaplain and instructor of other ministers, has described some areas in which the concerned minister can function effectively with a stroke patient. It is important that the pastor be involved with the family as well as with the patient. If the pastor understands some of the problems of the patient, he can then help the family to understand, accept, and react intelligently to a new and difficult situation. He

*"Understanding Aphasia" by Martha L. Taylor, Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, New York, New York. "An Adult Has Aphasia" by Daniel R. Boone, Cleveland Hearing and Speech Center, Cleveland, Ohio. "Language Problems After a Stroke," Kenny Rehabilitation, Minneapolis, Minnesota.

can explain the need to practice patience with the patient who understands and wants to respond but is slow in doing so. He can help the family to understand some of the emotional and spiritual aspects by which the patient has now become something of a stranger to them.

The pastor might be the one to spend time with the patient and help him verbalize his feelings and by so doing enable him to face the problems he cannot face by himself. From a life of activity he is suddenly disabled and forced into unaccustomed inactivity. The acute illness, with its dramatic critical concerns, soon passes. Visitors become fewer, the flow of cards from friends lessens, and the separateness of the experience begins to provide fertile ground for loneliness. The care of the patient is performed with a little less special attention. From loneliness we can see the progression to brooding and self pity and a general turning of attention toward the self. Frustration develops, helped along by the inability to do simple and accepted things. Then follows the reaction of resentment expressed by aggression wherein the patient may lash out at everyone, especially the ones he loves; and this in turn may drive people away and cause his circle to contract further.

One of the problems to be faced is that "everyone has forgotten me, even God." Stroke patients seem to feel more than others that their handicap represents a punishment from God. This feeling tends to develop as a consequence of guilt, which is common during times of illness. During this period of psychologic change and emotional disturbance, the pastor can contribute much, if only just by being there with the patient. His presence is evidence that he cares about the patient. If the patient is allowed to verbalize both positive and negative feelings and accept them, the feeling that someone cares will be increased. This sharing of his concerns and feelings will help the patient to catch new insights into the meanings of life, his faith, his illness, and his own self worth.

During the period of transition from the hospital to the home and the community, or in some cases to a nursing home, the minister can be extremely helpful, as pointed out recently by Chaplain Williams.[7] His contacts with people in the church and community who can assist the patient and his family may be most valuable. He can see that the patient is welcomed and received in a natural manner again in his own church. Frequently he can help in selection of a nursing home that will be suitable for the patient and then help the patient during the period of readjustment to the new facility.

Summary

Effective rehabilitation of the stroke patient requires an active, positive, progressive program supervised and guided by the patient's physician. Physical treatment and rehabilitation techniques should be started early and continued in the hospital setting until the patient can be relatively independent at home. Nursing personnel, hospital attendants, clergy, and relatives can be involved with the physician as members of the rehabilitation team. Many stroke patients can be satisfactorily managed in the community hospital and home environment, while some patients may be more adequately rehabilitated at a larger hospital or center with rehabilitation facilities. Members of the family, the clergyman, and the physician should continue the rehabilitation program after transition to the home and during adjustments to home, community activities, and the job. In any case, watchful waiting and delay of a full, active treatment program may only prolong convalescence and in some cases permit an unnecessary deterioration and regression of the patient's condition.

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JOSEPH F. MALLOY, M.D.
1897—1965

Joseph F. Malloy, M.D., retired Leola physician, passed away at the age of 68, at the Veterans Hospital in Denver, Colorado.

Dr. Malloy was born April 8, 1897 at Webster, South Dakota. He attended Creighton University, College of Medicine, and graduated in 1921.

Effective Psychopharmacology*

By

Ames Fischer, M.D., San Francisco

Intensive clinical usage of psychoactive drugs in the past decade has established psychopharmacology as a part of everyday medical practice. We are long past that time when "tranquilizers" were of interest only to psychiatrists; today nearly all physicians must understand the values and limitations of drugs that bring about changes in the psyche and become skilled in their use.[14] One reason is the increasing concern for the many patients who are not officially labeled as psychiatric, yet whose complaints are largely or entirely functional. Psychopharmacology offers new possibilities for the management of persons of this order.

In addition, the community-oriented care of psychiatric patients is gaining strength.[2] More and more of these people, who were previously sent to remote state hospitals, will be treated entirely by local facilities; and if institutionalized they will soon be returned home on maintenance medication. Psychiatrists alone will not be able to carry this workload of dealing with them. It will be up to physicians generally to offer most of the follow-up care. Kline[11] forcefully pointed out that "drug treatment is an absolute and unqualified necessity" in a community mental health program. Besides the effectiveness of the drugs in the treatment of psychotic persons, he stressed further advantages: They are relatively cheap; training in their use is relatively short; treatment continues even though the therapist or the patient miss sessions; a change of therapists is not a serious interference with treatment; limited intelligence or language or cultural differences are not overwhelming impediments; and drugs and psychotherapy may complement each other.

Categories of Drugs

Many systems have been devised for classifying psychoactive agents.[9] Most of them are overly complicated and may be misleading to the clinician. As a simple and practical guide, the physician need only keep in mind the following three categories: phenothiazines, antianxiety drugs, and antidepressants. This scheme provides the first step toward effective psychopharmacology.

The unfortunate term tranquilizer should be abandoned altogether. It was first popularly applied to the phenothiazines but has since been used to blanket a variety of drugs of diverse chemical structures and clinical applications. The ensuing confusion has led to such errors as the use of phenothiazines to "tranquilize" patients with neurotic anxiety or depression, often with aggravation of the basic disorder. Furthermore, with some withdrawn and immobilized schizophrenics, drug therapy may lead to increased interest and activity, an outcome hardly to be thought of as "tranquilization."

Phenothiazines

In the phenothiazine group are such effective agents as chlorpromazine (Thorazine®), thioridazine (Mellaril®), perphenazine (Trilafon®), trifluoperazine (Stelazine®), and fluphenazine (Prolixin®). Generally speaking, these agents should be reserved for the treatment of psychosis, particularly schizophrenia.[12] They may also be used in those depressive conditions in which there is an accompanying thought disorder, but only in combination with antidepressants. Occasional use of them in other psychiatric disorders should be left to experts. Properly applied, the phenothiazines have the ability to quell impulsive and bizarre behavior, to dampen over-reactions to internal or external stimuli, and to improve thought disorders. They may be expected to lessen anxiety in the psychotic patient, but they may only increase it in psychoneurotic persons.

Thus it becomes clear that the physician using drugs must have skill in recognizing schizophrenic and depressive illnesses, particularly in their disguised or nascent forms.

*Reprinted from California Medicine

Refer to: Fischer, Ames: Effective psychopharmacology — A review, Calif. Med. 102:217-221, March 1965. From the Langley Porter Neuropsychiatric Institute and the University of California School of Medicine (Psychiatry).

Anti-Anxiety Agents

Anti-anxiety agents are popularly represented by such drugs as meprobamate (Miltown,® Equanil®), chlordiazepoxide (Librium®), and diazepam (Valium®). They are commonly prescribed for a variety of anxiety-tension states and are among the most frequently used drugs in medical practice.

Pharmacologically they belong to the sedative-hypnotic family, so they can be habituating. It is preferable not to use them regularly for indefinite periods of time. Rather, they should be employed for periods of stress and crisis; the patient may then be told that the medicine works best if taken only at times of special need.

Although some clinicians disagree, the majority of them feel that these agents offer advantages over the time-honored barbiturates.[16] They seem to afford relief of anxiety and tension within a dosage range which avoids the more troublesome complications and side effects of the conventional sedatives. Chlordiazepoxide and diazepam are particularly recommended, the latter appearing to offer relief for mild or moderate depressive symptoms.

Antidepressants

Antidepressants are of two major groups. Phenelzine (Nardil®), nialamide (Niamid®), and isocarboxazid (Marplan®) have the ability to inhibit the enzyme monoamine oxidase (MAO).[7] Amitriptyline (Elavil®) and imipramine (Tofranil®) do not inhibit monoamine oxidase; they are generally safer and more effective than the MAO inhibitors.

Tranylcypromine (Parnate®) presents a special case. It is an MAO inhibitor that was widely used because it was more rapid in its action and more effective than the other members of its group. However, the reports of rare hypertensive crises associated with death from cerebrovascular accident caused its removal from the market for several months. These cases apparently were associated with the concurrent ingestion of cheese or other substances containing the precursors of pressor amines. Although recently replaced on the market, tranylcypromine can be prescribed only if a number of criteria are met.[15] Its use must now be considered restricted to a small number of special cases.

The early over-enthusiasm for the antidepressants has been modified.[3] They are useful agents, but they may not be expected to terminate serious depression in a significant proportion of cases. For this reason, the clinician should be alert to the possibilities of referring non-responsive patients for electroconvulsive therapy (ECT).

Reserpine compounds are practically not used today for psychiatric conditions. They were found to be less effective than the phenothiazines and to produce a high incidence of side effects. Physicians prescribing them as antihypertensive agents should bear in mind that they can induce depression.

Drug Combinations

Therapy with a single, properly chosen agent that relieves all the patient's symptoms is the ideal. Not only does this lessen the problem of managing side effects that often occur, it permits the physician to know at any time exactly which drug in what amount is necessary for the patient's well-being. Determining whether or not a given drug is still useful is no problem. However, psychiatric patients regardless of diagnostic category may suffer from several major symptoms at the same time. The "target symptom" concept of treatment simply means that several different drugs may be used in combination to attack co-existent symptoms.

The following are examples of combined therapy useful in common clinical syndromes:

- A phenothiazine and an antidepressant: As an example, amitriptyline might be combined with perphenazine or trifluoperazine in cases of schizophrenia with a significant depressive component or in involutional depression accompanied by a paranoid thought disorder.
- An antidepressant and an anti-anxiety agent: A combination such as phenelzine and chlordiazepoxide can be of value in mild or moderate depression in which tension and anxiety are manifested (Precaution: amitriptyline and chlordiazepoxide used together have been reported to cause a toxic confusional state).
- Two phenothiazines: Chlorpromazine and trifluoperazine, for example, have been of value in certain schizophrenic patients whose symptoms have not been successfully controlled by either agent alone without troublesome side effects such as excessive retardation or extrapyramidal symptoms.
- Drugs and electroconvulsive therapy: ECT may often be of great value in rapid control of depressive or schizophrenic symptoms. When this procedure is combined with phenothiazines or antidepressants, the course of convulsive treatment can be shortened; drug therapy is then relied upon to allow the patient to make an early return to his usual activities and to prevent relapse.

Side Effects

Side effects and complications in great variety have been attributed to psychoactive drugs. Fortunately, the serious ones are rare, and the common ones may be managed without great difficulty. The basic rule is that the physician must know all the potential hazards of each agent he uses. This will enable him to reassure the patient and take any further action promptly and effectively.

No attempt will be made here to detail all of the numerous side effects which might arise; there are many excellent discussions and reviews easily available.[1, 8] A helpful way to group them in one's mind is offered by the following scheme:

1, **Common, not serious:** This includes the autonomic reactions such as dryness of the mouth and constipation. Other examples are extrapyramidal syndromes and dermatitis.

2. **Less common, not serious:** Endocrine effects such as lactation, edema, temperature increases or decreases.

3. **Actually or potentially serious:** This group includes blood dyscrasias, hepatitis, hypotension or paradoxical hypertension and seizures.

The following comments are intended to call attention to some special aspects of managing side effects.

- Blood dyscrasias, usually granulocytopenia, are among the most serious of complications. Fortunately, these reactions are exceedingly uncommon. Routine laboratory tests are not recommended in monitoring psychoactive drug treatment. Instead, the physician should be alert to the possibilities and call for appropriate tests whenever there is any suspicion that a serious complication may account for the patient's symptoms (for example, blood cell counts, liver function tests).
- Jaundice at first was rather commonly seen as a complication of chlorpromazine therapy. For unknown reasons this has become rare in recent years. However, hepatic involvement remains a threat in antidepressant therapy, particularly with monoamine oxidase inhibitors.
- Hypotensive reactions may be quite troublesome, particularly in hypertensive patients or in the aged. All categories of drugs may produce this difficulty, but it is most commonly encountered with phenothiazines and antidepressants.
- Imipramine and amitriptyline may occasionally produce toxic psychosis, especially in aging patients or in those who have some brain damage. Such persons may be better treated with diazepam or electroconvulsive therapy.
- Imipramine or amitriptyline should never be used in conjunction with an MAO inhibitor. The result may be a severe reaction involving cardiovascular collapse. A week should be allowed to pass before switching from an MAO inhibitor to imipramine or amitriptyline, or vice versa.
- Extrapyramidal side effects are frequently concomitant with phenothiazine treatment. These are of three types — Parkinsonism, dystonias and akathisia (pathological restlessness). All can be managed with anti-Parkinsonian drugs and/or reduction of dosage, if feasible. It is advisable to anticipate the onset of these complications and to give prompt treatment, since they may be quite distressing to the patient, particularly dystonias. Akathisia must be recognized for what it is; the unwary may mistake it for mounting nervousness or agitation and increase the drug dosage, thereby producing an intolerable akathisia.
- The most important element in successful management of nearly all side effects is confident reassurance by the physician. This can only arise from the physician's own knowledge, skill and comfort in meeting the problems. For example, if a patient taking phenothiazines presents herself with edema of the ankles or lactation, and the physician is unaware that these may be harmless concomitants of the drug, a frantic and futile search for the systemic source of the symptoms might ensue. Although the complete list of possible side effects is an imposing one, large numbers of patients have tolerated these drugs well and feel the subjective benefits they perceive far outweigh the discomforts of minor side effects.

Precepts and Pitfalls

The most serious sources of error in using phenothiazines lie in widespread misconceptions as to what is an adequate dosage and what is optimal duration of treatment. The information supplied by the manufacturers understates the dosage level needed by most psychotic or ex-psychotic patients. Forrest and coworkers[5] make an excellent and well-documented plea for revision of opinion as to what constitutes a "high" dose. They pointed to those psychotic patients who are restored to health on carefully adjusted maintenance dosages of drugs while in the hospital. Too often these people are then given follow-up care by physicians who are uneasy with what they feel to be too large a dose

of the drug being used. Hence the dose may be reduced prematurely, relapse and return to hospital following to make a sad cycle of iatrogenically recurrent psychosis.

The problem is further compounded if the physician feels that a few months of post-hospital treatment should be sufficient for patients whose symptoms have subsided. The literature is filled with reports of people who must take drugs for many years in order to maintain remission.[4, 6, 17] Since phenothiazines are non-addictive and well tolerated by most patients, a physician's urgency to discontinue medication is difficult to understand. When in doubt, the physician is advised to confer with those who treated the patient during his stay in hospital so that a rational, long-range plan may be worked out. It is easy to be misled by the benign appearance of a psychotic patient in remission and to conclude that drugs are no longer needed. The physicians who treated him in the active psychosis may have more respect for the potential of symptom recurrence.

Sometimes the patient is either not reliable or is resistant to the idea of continuing a drug regimen. In such cases the responsible family members should be made to understand the importance of the medication and their role in seeing that the patient follows the program faithfully.

The same rules of adequate dosage and length of treatment apply to persons experiencing a psychotic illness, but for whom confinement in a hospital can be avoided. Not before a needed drug is given in dosage to the point of tolerance, even though significant side effects occur, should it be abandoned as a failure. Furthermore, inadequate dosages may only partially suppress the psychosis, leaving it to smolder. A later flare-up of symptoms then might confront the physician with a chronically psychotic patient relatively resistant to treatment.

It must be borne in mind that drugs in themselves solve no human problems. Medicines are simply an adjunct to total treatment, given in the context of an understanding and supportive physician-patient relationship. It is essential to listen to the patient and understand his difficulties in living. Frequently, medications will help the patient by reducing his anxiety and confusion to a point where he is better able to assess his problems and work constructively toward solving them. Discussions with the physician then become even more necessary and productive. No psychoactive drug should be given in an offhand manner, as a way of "disposing of" a troublesome or perplexing patient.

The temptation to try out each newly-introduced psychoactive agent must be overcome. Chances are very slim that the new will offer any considerable advantage over the older and more familiar drugs, and using the new and untried entails the disadvantage that the physician does not have the experience and assurance he has gained with the older drugs. He should become thoroughly acquainted with a few agents in each category—with psychoactive drugs, familiarity breeds facility.

That the patient at one point is taking what seems to be his optimal dosage cannot be assumed to mean that the optimal will never change. Each patient must be watched carefully for recurrences or changes of symptoms which may signal the need for an increased dosage. Others may begin to show such side effects as drowsiness or lethargy while taking a previously well tolerated dosage, and this may indicate that a reduction in dosage is in order. Or, if a growing depression is manifested, the therapist may wish to add an antidepressant to the regimen. Often changes in the patient's environmental situation, such as a new job or different living arrangements, may make a change in the drug regimen desirable.

The principle is that each individual's response to psychoactive drugs is idiosyncratic, that the response may vary between one person and the next and may vary in the same individual from one time to another. Hence the need for clinical alertness is obvious.

For Further Reference

A brief review such as this one can only touch on some of the broad principles and approaches to effective psychopharmacologic therapy. Numerous questions arise in the course of daily practice which can be satisfied only by further study and reference. The following are recommended sources for the non-psychiatric physician:

- The short volume by Benson and Schiele[1] is concise and authoritative. It may be thought of as a **handbook of psychopharmacology** for non-psychiatric physicians.
- Kalinowsky and Hoch's classic volume[10] on somatic therapy in psychiatry has recently been revised to include extensive treatment of the psychoactive drugs in addition to the previous sections on electroconvulsive therapy, in-

(Continued on Page 32)

Path C A P sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

CYTOPATHOLOGY

Despite initial incredulity, objections and opposition from many sources, cytology or better cytopathology, is probably today's most important and useful tool in early cancer diagnosis. The method is not new, but its worldwide acceptance, due to the meticulous work of the late Dr. Papanicolaou, is relatively recent.[1] His initial work was on the cytology of the female genital tract, and most knowledge in cytology today stems from this same source.

Preparations of sputum, bronchial washings, pleural and peritoneal fluids, material from the stomach and colon, scrapings from buccal mucous membranes and skin lesions when biopsy is impracticable, all can contain cancer cells. Other practical applications are in the fields of endocrinology, radiation therapy, enzyme studies, tissue culture and other research areas.

Cancer is an ever present and increasing problem. Better prognosis and hope of cure are inextricably connected with early diagnosis when the lesion is small and in its early stages. Cytology is both accurate and reliable in this phase of the disease.

Cytology has had its foremost application in the diagnosis of pre-clinical cancer. Most lesions of the cervix discovered by cytologic methods are not detectable by clinical examination. If universally applied, cytology could be the means of eradicating the second most common cause of death from cancer among women. This simple, painless, inexpensive office procedure has the highest yield of case finding for each dollar spent, of all methods of cancer detection.

In order for the physician and his patient to get the maximum benefit from the procedure some pertinent points should be kept in mind:

1. Make certain that the patient does not bathe or douche before the examination.
2. Do not use any lubricant other than water on the speculum.
3. Make thin even smears including material from the squamo-columnar junction and vaginal pool.
4. Label smears immediately with patient's name (frosted end slides work well).
5. Exercise extreme caution not to mix patient's names and slides.
6. If slides are to be fixed, put into fixative immediately before any drying occurs.
7. If slides are to be dried, air dry completely before placing in any closed container.
8. A yearly smear is usually indicated unless more frequent examination on certain patients is suggested by the pathologist.
9. Smears are indicated on all women over 25 and in even very young multiparous women. (Cervical cancer has occurred at age 18).
10. Many women have been educated to ask for a cytology test. Remember that the absence of any discernable lesion does not preclude necessity for taking the smears.

Cervical cytology is a screening procedure and does not offer a final, definitive diagnosis upon which treatment can be based. Consequently, surgery or radiation therapy should not be done on patients having positive cytology smears until the extent and exact nature of the lesion have been determined by biopsy. Any cervical lesion which is clinically suggestive of carcinoma should have an immediate biopsy and not a cytology smear. Some advanced malignant lesions exfoliate few, if any, cancer cells.

Amazing correlation between positive smears and biopsy findings are possible if certain precautions are kept in mind and followed:

1. Cervical biopsies, usually a cold cone, should be done before dilatation and curettage since small lesions may be lost.
2. Too vigorous cleaning of the cervix can wipe off small lesions.
3. Adequate biopsies, usually including the squamo-columnar junction, are necessary.
4. All biopsy material must be sectioned, and enough sections made to demonstrate the source of abnormal cells if this is at all possible.
5. Endometrial cancer is not always detected in cytology preparations. As collective experience is gained, the number of "missed" cases is steadily declining. A suspicious clinical history in a woman, particularly if post-menopausal, is an indication for a dilatation and curettage, even though cytology smears are negative.

The best interests of the patient are served when the physician who obtains the smear has close liaison with the pathologist who interprets the smear and makes the tissue diagnosis. The pathologist will furnish directions for obtaining and preparing material which will enable him

to make the best possible diagnosis. Techniques vary, and various methods can produce completely satisfactory results; for example, smears may be fixed immediately or air-dried.

The physician should acquaint himself with the terminology used by the pathologist of his choice. It is well to know just what the pathologist means when his diagnosis is "metaplasia," "basilar hyperplasia," or "carcinoma in situ," to name just a few.

Today many individuals are attempting to practice cytology. In various areas of the country technicians and lay people have set up so-called "cytology laboratories." To quote Dr. L. G. Koss, an eminent cytologist; "Diagnostic cytology is a difficult and demanding discipline and must be based on solid knowledge of histologic patterns of disease. The principles of the microscopic diagnosis of cancer cannot be mastered during a short course . . . . Diagnostic cytology is a branch of anatomic pathology and should not and cannot be practiced effectively at any distance from the autopsy room, the tissue laboratory or histologic preparation."[2]

In summary, cytopathology offers an extremely effective, painless, inexpensive method for detection of early cancer in various sites, principally the cervix. It can be performed as an office procedure, and if universally applied could virtually eradicate cervical cancer as a disease entity.

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EFFECTIVE PSYCHOPHARMACOLOGY—

(Continued from Page 30)

sulin coma therapy and other somatic methods. It may best be considered as a work for special reference or as a book for those with an unusual interest in psychiatric treatment.

• The volume by Ruesch and coworkers[13] on psychiatric care includes four chapters which set forth detailed guidelines for clinical psychopharmacotherapeutics. This book is recommended particularly to those who wish to know more about psychiatric management in general rather than restricting themselves to psychopharmacology.

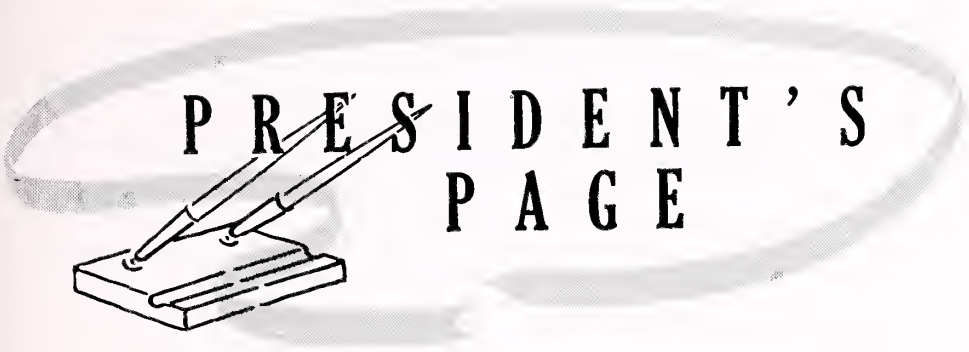
The Place of Consultation

Personal experience, study and references will not be enough to meet every clinical situation. Troublesome, risky or unclear cases justify seeking psychiatric consultation, which may be aimed at such matters as diagnosis, choice of appropriate drugs, management of side effects, the indications for electroconvulsive therapy, whether hospitalization is necessary or not and many other questions. All physicians who deal with mentally disturbed patients will do well to select a psychiatric consultant in whom they have confidence. However, it is well to keep in mind that not all psychiatrists have interest, experience or skill in psychopharmacology.

Finally, consultation ought not be delayed until the clinical situation has become critical. Prompt clarification of a problem case may be the means of avoiding a stay in hospital, deterioration of the illness or even suicide.

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PRESIDENT'S PAGE

Dear Doctors:

It has been with mixed emotion that we have watched Congress work on the Medicare bill. It seemed that in spite of anything we said or did, the pendulum for Medicare swung so decisively in one direction that it has become the law of our land with a very minimal amount of dissenting among the House and Senate of Congress. This is an action of our Law Making Body that we have little to be proud of. Much has been said that our Association acted too slowly and not in unison. Much of that may be true, but we must always remember that the A.M.A. is made up of professional men who have varied views as to how Medicare enactments should have been defeated. In spite of all that has been said, I question much whether any change in action by the A.M.A. would have lessened the impetus of the Party in control, to put forth all available effort to see that Medicare is enacted into law.

The Medicare bill has been signed into law and it is our duty as citizens of the U. S. to abide by the law of our country. Even though the law has passed, we have been able to restrict and defeat some of the provisions of the original bill. It seems that we must consider it a victory, at least for now, to have eliminated the Specialties from hospital coverage of the Pathologists, Radiologists, Anesthesiologists and Psychiatrists in the basic plan. It is imperative that satisfactory details be worked out so that these Specialties will be kept out of the basic plan. We are certain that the hospitals and government officials will try to overthrow this segment of the bill in an attempt to return these to the basic plan of the hospital coverage.

The H.E.W. will need to negotiate with the provider of the care in the supplemental part of the plan. They have asked to have conference with Blue Shield to try and see what solution can be offered. We still have some bargaining power if our A.M.A. will support in unison the right of Blue Shield to negotiate for the doctors. It is quite imperative that action is in unison as the H.E.W. would like to again, as in the past, take on the small segments of medicine, and bring them into the fold without ever really negotiating with them. H.E.W. needs medicine to make the law operate in a reasonable fashion. Only if we are represented by a unified spokesman, can we expect to have any real voice in the regulation and operation of the plan. It is very desirable that we remain in constant deliberation with H.E.W. so that we have the opportunity to try and keep the fees for services reasonable and prevailing. We must try and make the program provide the intent of the law. It is quite certain that the cost of this care will be so prohibitive that possibly in the future we will be able to, through elected Congressmen, limit the benefits to the needy. It seems logical that by keeping a voice in the planning and a hand in the administration of this law, we will be in a better position to limit the pendulous swing into massive socialized medicine.

Fraternally yours,

Paul Hohm, M.D.
President

TENTATIVE PROGRAM
ANNUAL MEETING
SOUTH DAKOTA CHAPTER OF AMERICAN
COLLEGE OF PHYSICIANS

September 24 and 25, 1965
University of South Dakota School of Medicine
Vermillion, South Dakota

Friday afternoon, September 24

Papers by:	Discussion of papers:
1. E. Sanderson, M.D., Sioux Falls Complications of Diuretic Therapy	W. Janss, M.D. Rapid City
2. G. Paulson, M.D., Rapid City Anterior Pituitary Deficiency in Adult Man	J. Donahoe, M.D. Sioux Falls
3. W. Taylor, M.D., Aberdeen Pulmonary Hemosiderosis	R. Bareis, M.D. Rapid City
4. W. Jones, M.D., Sioux Falls Telemetering of Cardiac Function	C. Gryte, M.D. Huron
5. D. Driver, M.D., Sioux Falls Subject not yet known	J. Argabrite, M.D. Watertown
6. C. Clark, M.D., Watertown CPC	J. Tidd, M.D. Yankton

Saturday morning, September 25

Symposium:

Physiology of pulmonary function with discussion of clinical problems of pulmonary ventilation insufficiency.

Presented by Dr. Norman Hepper and associates, Mayo Clinic, Rochester, Minnesota.

The Program Committee

R. F. Thompson, M.D.
C. F. Johnson, M.D.
W. L. Jones, M.D.

AMERICAN CANCER SOCIETY, INC.

Mrs. Patricia Saunders, Assistant Editor
South Dakota Journal of Medicine
711 North Lake Avenue
Sioux Falls, South Dakota

July 28, 1965

Dear Mrs. Saunders:

Year after year, the medical journals have given generous coverage to American Cancer Society advertisements, thus providing us with a valuable means of communicating with professional men and women across the country.

It is gratifying, indeed, to read so many of the leading professional publications and find the Society's messages prominently displayed. I should like to express to you, for myself and the Society, our deep appreciation for your vital support.

Cordially,

James P. Cooney, M.D.

To the Editor:

Inasmuch as it is appreciated that the South Dakota Journal of Medicine opens its pages to the PKU-problem (July, 1965, pg. 24-30) it is somewhat disappointing that the statement of the Committee of the Handicapped Child of the American Academy of Pediatrics (Pediatrics, vol. 35, Mar., 1965, pg. 501-503) has been shortened and that the editorial emphasis has been placed upon the problems of treatment. In doing so it will add to the confusion.

It is, however, most regrettable, that the statement of the Committee on Fetus and Newborn of the American Academy of Pediatrics in the same issue of Pediatrics, on the preceding pages (pgs. 499-501) has been ignored completely. This statement deals with the "Screening of newborn infants for metabolic diseases." The latter cannot be assumed to be common knowledge since Pediatrics as the official Journal of the American Academy of Pediatrics ("Green Journal") has only a circulation of approximately 12 copies in South Dakota.

"Law suits encouraged by certain lawyers" have not yet dealt with a failure of treatment, and probably never will, since a dietary treatment alone not always solves the problem of mental retardation. However, lawsuits have been won already (in the state of New York) for failure to carry out a simple screening test in the newborn, and this testing is exactly what the Committee of Fetus and Newborn recommends.

The urgency of such a program is underscored by the fact that between February and July, 1965 two newborns in South Dakota have been found to have phenylketonuria and this was accomplished with a very limited and voluntary test program. A third child was found during the same time under the new admissions of the State School and Hospital in Redfield.

In view of these facts, it appears high time that we get clear advice from the respective bodies in our own professional framework.

E. H. Heinrichs, M.D.

Santiago, Chile
Junio 25, 1965

Mr. Richard Erickson
Medical Association
South Dakota

Dear Sir:

From this far away land of South America I thank you from the bottom of my heart for your great kindness to the village Cunco which bears the name of South Dakota.

After hearing the happy news from Mrs. Katharine Ray of the United States Economic Mission, I immediately came to Santiago in order to thank the Ambassador of the United States personally for the generous donation from the doctors of the State of South Dakota.

All the inhabitants of South Dakota, Chile, are extremely grateful for this financial assistance as it will allow the doctor's home to be finished. This doctor will come in four months' time to settle down in Cunco (Cautin) near the Village South Dakota, as promised by the Chilean Minister of Health.

May God bless you for your wonderful gesture of gathering the necessary funds and may He bestow every happiness upon the doctors of your Association who, across the American Continent, have extended a friendly hand to the inhabitants and to the future doctor of the Village South Dakota, that bears this name with pride and gratitude.

Yours truly,
Fray Bernabe de Lucerna

This is your
MEDICAL ASSOCIATION

News Notes • Changes • Births • News

Pop's Proverb

Many have murdered the man they set out to be for the questionable goal of making money.

NEWS NOTES

Walter C. Miller, M.D., a Pediatrician, has joined the Aberdeen Medical Center in Aberdeen, South Dakota.

* * *

There are three new doctors associated with the Yankton Clinic. They are **Lawrence E. Savage, M.D.,** Cardio Vascular and General Surgery; **James K. Jackson, M.D.,** Orthopedic Surgery and **Richard I. Porter, M.D.,** General Medicine.

* * *

Juan R. Chavier, M.D., a pediatrician, has joined practice with **Noel de Dianous, M.D.** at the Professional Arts Building in Aberdeen.

* * *

Floyd Gillis, M.D., Mitchell, physician and surgeon, was named to the School Board to the unexpired term of **Warren Peiper, M.D.** who recently moved to Minneapolis.

* * *

The fourth annual Black Hills Medical Seminar was held at Surbeck Center on the School of Mines Campus. The outstanding speakers featured were: **Richard W. Booth, M.D., Raymond G. Bunge, M.D., John A. Moncrief, M.D., Merle Musselman, M.D., Alton Ochsner, M.D., John W. Rebuck, M.D., Donald A. Scholz, M.D., Ryk P. Spoor, Ph.D.** and **James R. Tabor, M.D.**

James E. Ryan, M.D., Mobridge, is now associated with the Spiry Clinic in the general practice of medicine and surgery.

* * *

L. W. Karlen, M.D. has begun practice in Madison with **Howard Wold, M.D.** and **George Whitson, M.D.**

* * *

Donald H. Lindeman, M.D. has joined the staff of the Viborg Clinic. He is associated with **C. E. Kemper, M.D.** and **M. J. de Almeida, M.D.**

* * *

B. E. Strauss, M.D. has opened an office in Parker for the practice of medicine, surgery and obstetrics.

* * *

Walter A. Kitzler, M.D., formerly of Faulkton, has joined the staff of the Webster Clinic.

* * *

Thomas Bunker, M.D. is now associated with his father, **Paul G. Bunker, M.D.** in Aberdeen. Both doctors are ear, nose and throat specialists.

* * *

The Inaugural Scientific program of the new Ancker Hospital (Saint Paul-Ramsey Hospital) will be held on November 11-13, 1965. The program will include two days of general medical meetings and one-half day specialty meetings. For further information write to: James F. Hammarsten, M.D., Chief of Medicine, Ancker (Saint Paul-Ramsey) Hospital, Saint Paul, Minnesota.

H. Streeter Shining, M.D. is now associated in the department of Internal Medicine at the Western Dakota Medical Clinic in Rapid City, South Dakota.

* * *

The South Dakota Chapter of the American College of Physicians will hold their Annual Meeting September 24 and 25, 1965 at the University of South Dakota School of Medicine in Vermillion, South Dakota.

* * *

The Board of Directors of South Dakota Blue Shield met on August 5th in Rapid City. Mr. John Castellucci, Executive Vice-President, of the National Association of Blue Shield Plans met with the Board to discuss future coverage in South Dakota.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

Clem J. Mattson, M.D. has joined the staff of the Britton Medical Center.

* * *

The latest clinical and research information on Hodgkin's Disease will be presented at a Symposium, co-sponsored by the American Cancer Society and the National Cancer Institute, to be held November 22, 1965 at the New York Hilton Hotel in New York City. For further information write: Dr. Jack W. Milder, Research Dept., American Cancer Society, Inc., 219 East 42 street, New York, New York 10017.

* * *

The need for a cardiac pacemaker is infrequent in the general practice of medicine, but when it is needed, the need must be recognized and the pacemaker should be readily available.

Recognizing these factors, the South Dakota Heart Association has awarded a grant to members of the Department of Physiology at the University of South Dakota School of Medicine to study this problem. In order to do so, however, the availability of this service to practitioners in the area must be made known. Furthermore, in order to obtain a significant number of cases for study, this service must be made available to a wide area.

The radiotelemeter and tape recording apparatus, and the temporary catheter pacemakers are costly items which render them prohibitive for purchase by the average hospital. The technical operation of this equipment, and the interpretation of the results obtained require a working knowledge that is overburdening for the practicing physician; and the need for this capability would be infrequent. The equipment, although heavy and cumbersome, can be transported to any hospital for use in identifying the cause of syncope in a patient and aid in identifying those patients who need an artificial pacemaker from those who would be better treated medicinally.

Therefore, the practicing physician in South Dakota is urged to utilize this service. For further information regarding these services contact Dr. Joseph Welty, Department of Physiology, University of South Dakota School of Medicine, Vermillion, S. D., or Dr. Warren L. Jones, Sioux Falls, S. D.

* * *

There are new House Officers in two Sioux Falls hospitals since July 1, 1965 serving their internships. Some of these young physicians will be looking for a practice location for next July.

Serving at McKennan Hospital are: Dr. Earl J. Heller, Dr. William H. Hervey II, and Dr. Clayton A. Lang, from the University of Kansas School of Medicine; Dr. Neal Melby, from the University of Wisconsin Medical School; and Dr. Philip M. Schap, and Dr. Rudolf Strnot, from State University of Iowa College of Medicine.

On duty at Sioux Valley Hospital are: Dr. Delwin K. Ohrt, Dr. Eugene R. Regier, Dr. Noble L. Swanson, and Dr. Lonnie L. Waltner, from the University of Nebraska College of Medicine; Dr. Ronald O. Wyatt, from Southwestern Medical School; Dr. Guy Tam, from State University of Iowa College of Medicine; Dr. Adrian J. Wolbrink, from the University of Minnesota Medical School.

It is of interest to note that five of the above named physicians were students at the University of South Dakota School of Medicine before transferring to a four-year medical school for completion of their medical education.

* * *

The American College of Physicians is presenting the following postgraduate courses: Postgraduate Course No. 3, "The Rheumatic Diseases Pathology, Diagnosis and Treatment," Oct. 18-22, 1965, Harvard Medical School, Robert B. Brigham Hospital and Peter Bent Brigham Hospital, Boston, Mass. Postgraduate Course No. 4, "Molecular Biology: Its Implications For Modern Medicine," Oct. 27-28, 1965, University of Chicago, 1307 East 60th Street, Chicago, Illinois.

For further information write Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

* * *

The American Association of Automotive Medicine sponsored in cooperation with the Mayo Clinic and Mayo Foundation is presenting a medically oriented program of general interest relating to automotive safety and accident prevention. All physicians are invited to attend. It will be held October 22-23, 1965 at the Mayo Clinic in Rochester, Minnesota. The registration fee is $20.00. For registration write Postgraduate Courses, Mayo Clinic, Rochester, Minnesota 55902.

The IX International Cancer Congress will take place in Tokyo, Japan, October 23-29, 1966.

Anyone interested should communicate with Hirsch Marks, M.D., 435 East 57th Street, New York 22, N. Y.

* * *

The Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in Laryngology and Bronchoesophagology from September 20 to October 2, 1965. This course is limited to fifteen physicians, and will be under the direction of Paul H. Holinger, M.D. It will be held at the new Illinois Eye and Ear Infirmary, 1855 West Taylor Street, Chicago. Instruction will be provided by means of animal demonstrations, and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Postoffice Box 6998, Chicago, Illinois 60680.

* * *

A library of more than 300 one-hour tape recordings, devoted to comprehensive discussions of everyday office problems by leading specialists, has just been released to the medical profession by the Audio-Digest Foundation, Los Angeles.

The Catalog of Classics is available free of charge and may be obtained by writing the Foundation Editorial Offices, 619 S. Westlake Ave., Los Angeles, Calif. 90057.

Roger S. Jernstrom, M.D. has been installed as a fellow of the American College of Obstetricians and Gynecologists. His late father was a well known Rapid City physician. A 1957 graduate of the University of Utah College of Medicine in Salt Lake City, Dr. Jernstrom has been in practice in Omaha. He also is an instructor at the University of Nebraska.

* * *

Duane B. Reaney, M.D., observed his birthday Saturday, June 5th, and in honor of the occasion the stork wove a fine thread of coincidence for the Yankton Physician. It began Friday evening, when Dr. Reaney delivered a son to Mrs. **Duane** Jensen of Irene.

Then on Saturday, in order, the doctor delivered a daughter to Mrs. **Duane** Pike of Yankton, a son to Mrs. **Duane** Sudbeck of Hartington, Neb., and a son to Mrs. **DeWayne** Kozak of Yankton.

* * *

The South Dakota Clinic Managers held their annual meeting recently at the Alonzo Ward Hotel, with John Rathbun, Aberdeen Medical Center, acting as host.

Cities represented were Sioux Falls, Huron, Watertown, Webster, Rapid City, Pierre and Aberdeen.

* * *

H. Russell Brown, M.D., Watertown, was elected president of the South Dakota Blue Shield plan at a directors' meeting held during the South Dakota State Medical Association Annual Meeting. Other officers elected are **J. T. Elston, M.D.,** Rapid City, vice-president and **Richard C. Erickson,** Sioux Falls, executive director of the plan, was elected secretary-treasurer.

The South Dakota State Medical Association Auxiliary installed **Mrs. G. H. Steele,** Aberdeen, president; **Mrs. Roscoe Dean,** Wessington Springs, president-elect; **Mrs. T. J. Wrage, Jr.,** Watertown, first vice president; **Mrs. T. R. Anderson,** Sioux Falls, second vice president; **Mrs. Bruce Lushbough, Brookings,** treasurer, and **Mrs. Courtney Anderson,** Sioux Falls, recording secretary.

A. P. Reding, M.D., Marion was installing officer.

* * *

The Seventh National Conference on the Medical Aspects of Sports, sponsored by the American Medical Association under the auspices of the AMA Committee on the Medical Aspects of Sports, will be held in Philadelphia, at the Benjamin Franklin Hotel on November 28, 1965.

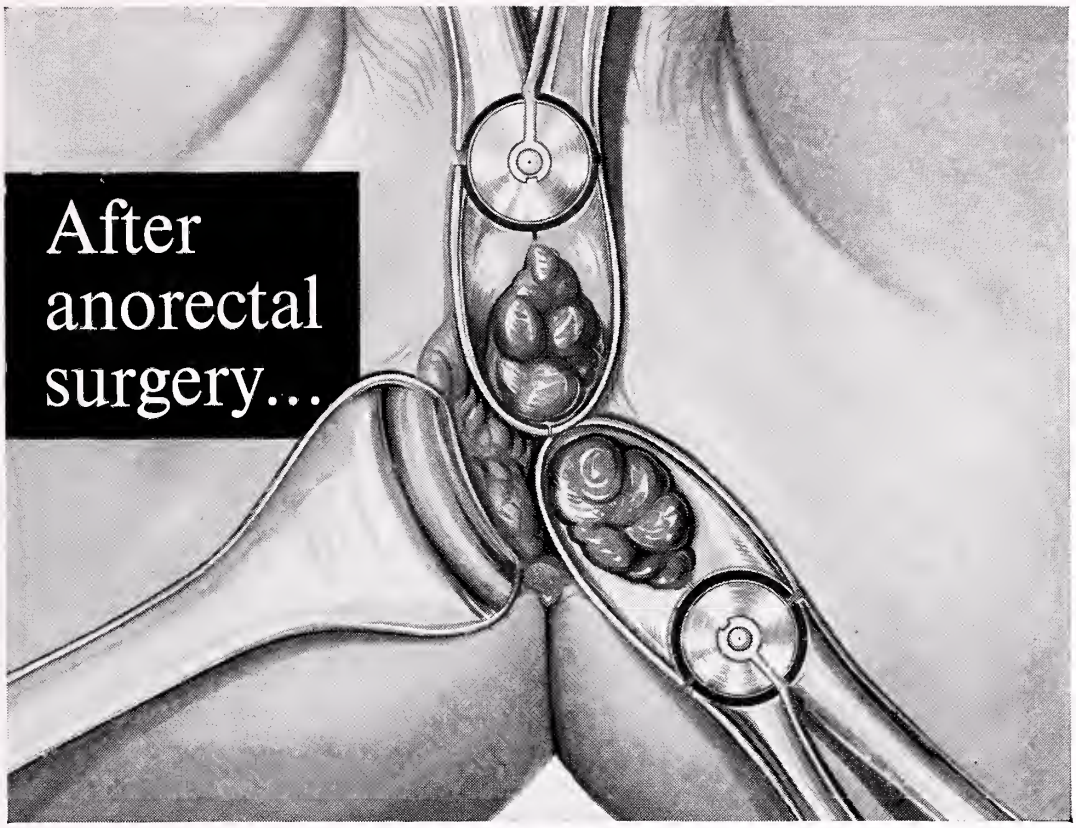
Those interested in receiving further information concerning the Conference should address the Secretary, Committee on the Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

* * *

The Department of Obstetrics & Gynecology, University of Florida, College of Medicine, is sponsoring a Postgraduate Medical Seminar Cruise, February 28 - March 4, 1966 to Nassau/Freeport.

The Medical Seminar Cruise will be made aboard the SS Ariadne which offers all facilities needed to provide the ideal atmosphere for study and socializing.

For further details on cruise reservations contact, E. M. Baskette, Eastern Steamship Line, Post Office Box 882, Miami, Florida 32101.



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Side Effects typical of tetracyclines include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis, dermatitis, overgrowth of nonsusceptible organisms, tooth discoloration (if given during tooth formation) and increased intracranial pressure (in young infants). Also, very rarely, anaphylactoid reaction. Reduce dosage in impaired renal function. Because of reactions to artificial or natural sunlight (even from short exposure and at low dosage), patient should be warned to avoid direct exposure. Stop drug immediately at the first sign of adverse reaction. It should not be taken with high calcium drugs or food; and should not be taken less than one hour before, or two hours after meals.

Average Adult Daily Dosage: four divided doses of 1 capsule each or two divided doses of 2 capsules.

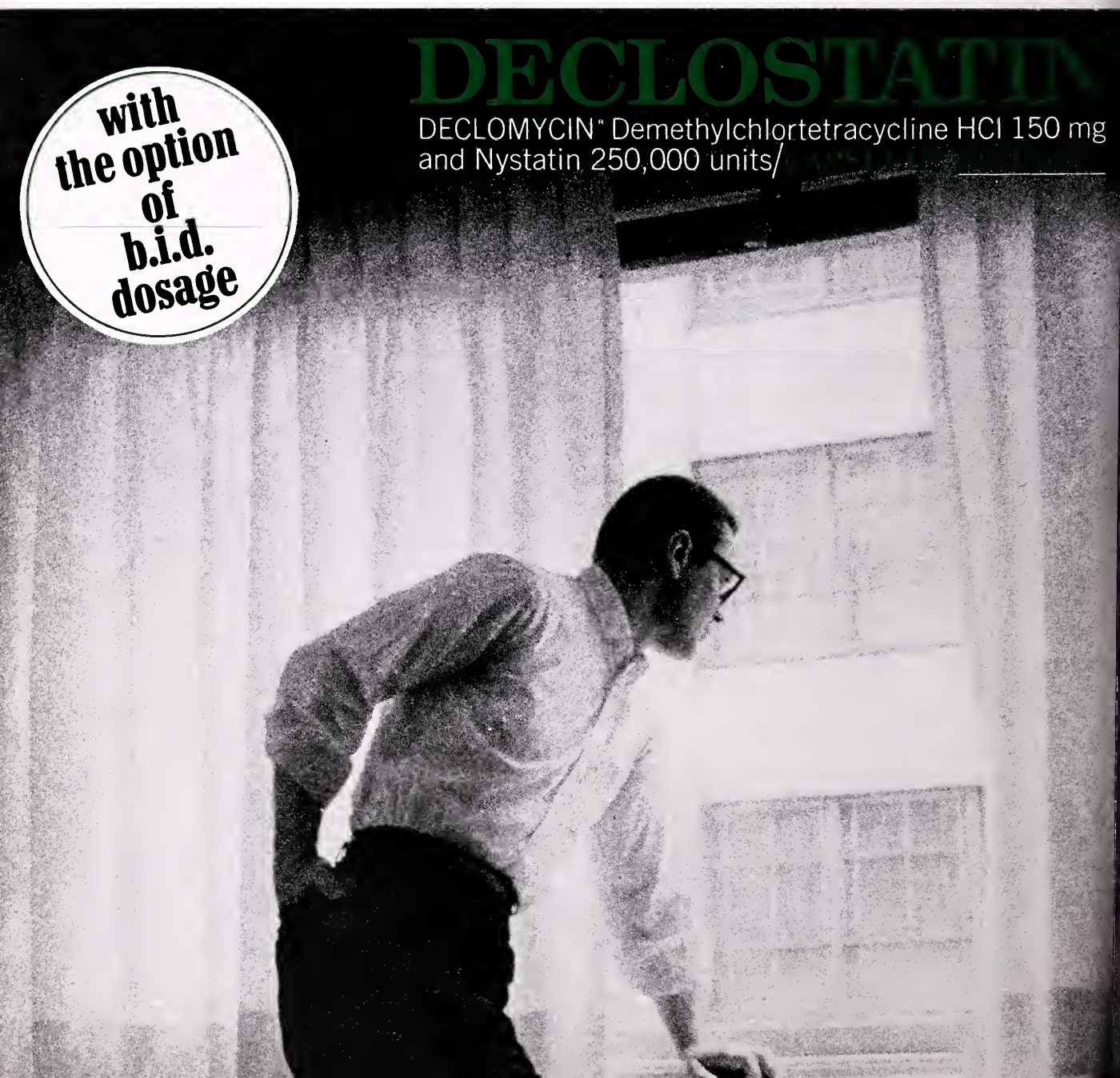
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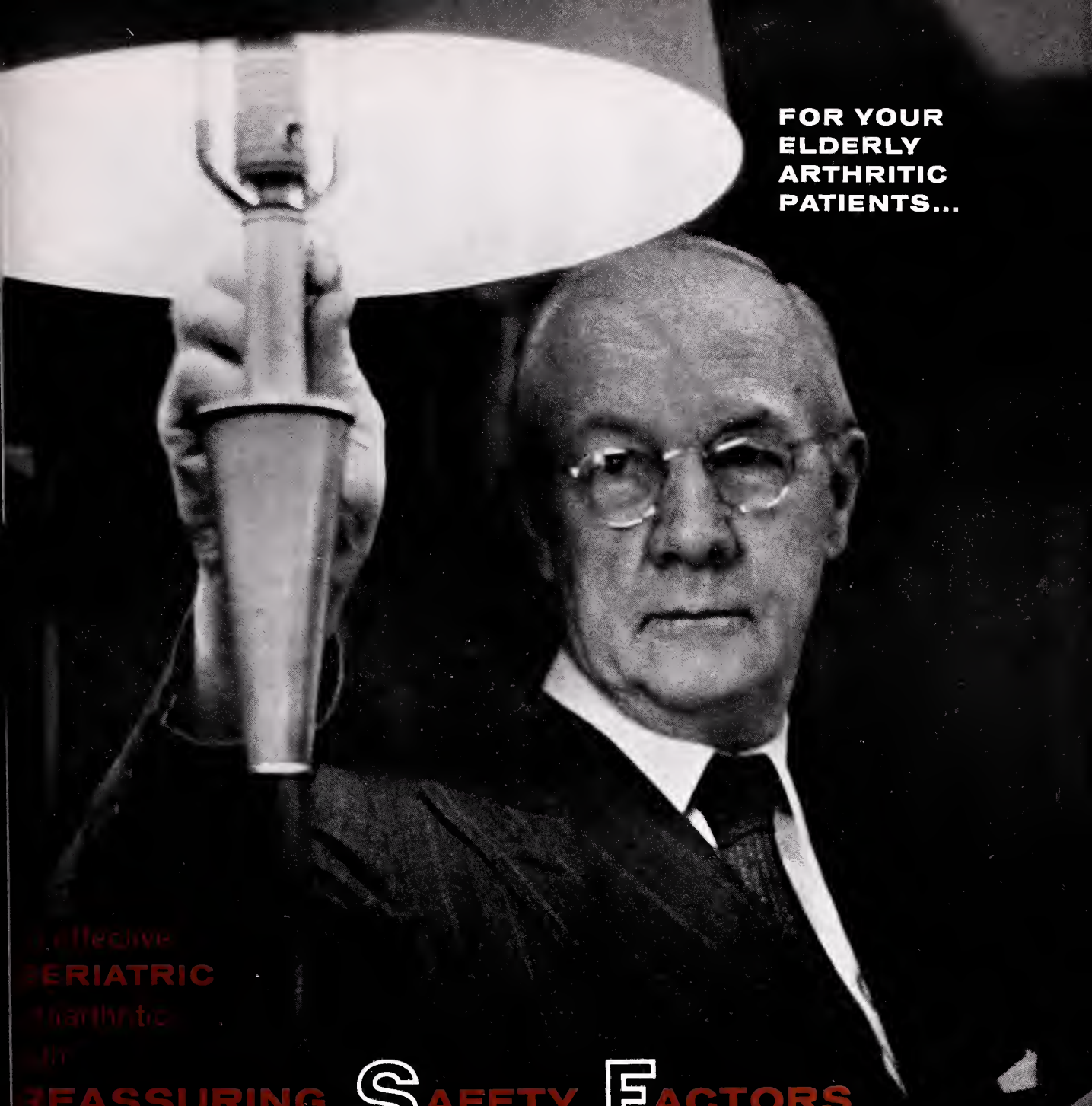
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Side Effects: Occasionally, mild salicylism may occur, but it responds readily to adjustment of dosage. Precaution: In the presence of severe renal impairment, care should be taken to avoid accumulation of salicylate and PABA. Contraindicated: An hypersensitivity to any component.

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So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all registered nurses aren't alike, either.





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Trademark

Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

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Summary of contraindications, cautions and side effects: Do not use in patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal obstruction, or bladder neck obstruction. Use with caution in the presence of hypertension, hyperthyroidism, or coronary artery disease. Drowsiness; excessive dryness of nose, throat or mouth; nervousness or insomnia may occur on rare occasions but are usually mild and transitory.

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Anturane®
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Dosage
Anturane, brand of sulfinpyrazone, is available as white, scored tablets of 100 mg. Initially, give half a tablet 4 times daily with meals or milk, increasing in one week to one tablet q.i.d. Increase to two tablets q.i.d. if necessary, and reduce if possible to as low as half a tablet q.i.d. after control. Continue through acute attacks, which can be concomitantly treated with phenylbutazone.

Patients on other uricosurics may be transferred to this drug at full dosage

Contraindications
Active peptic ulcer. Salicylates and citrates antagonize the drug's action and are contraindicated for concomitant use.

Warning
Use with caution in pregnant women.

Precautions
Keep patients under close supervision and make periodic blood counts. Use cautiously in patients sensitive to pyrazoles, in patients with histories of peptic ulcer, and in conjunction with sulfa drugs, the sulfonylurea hypoglycemic agents, and insulin, the actions of which may be potentiated.

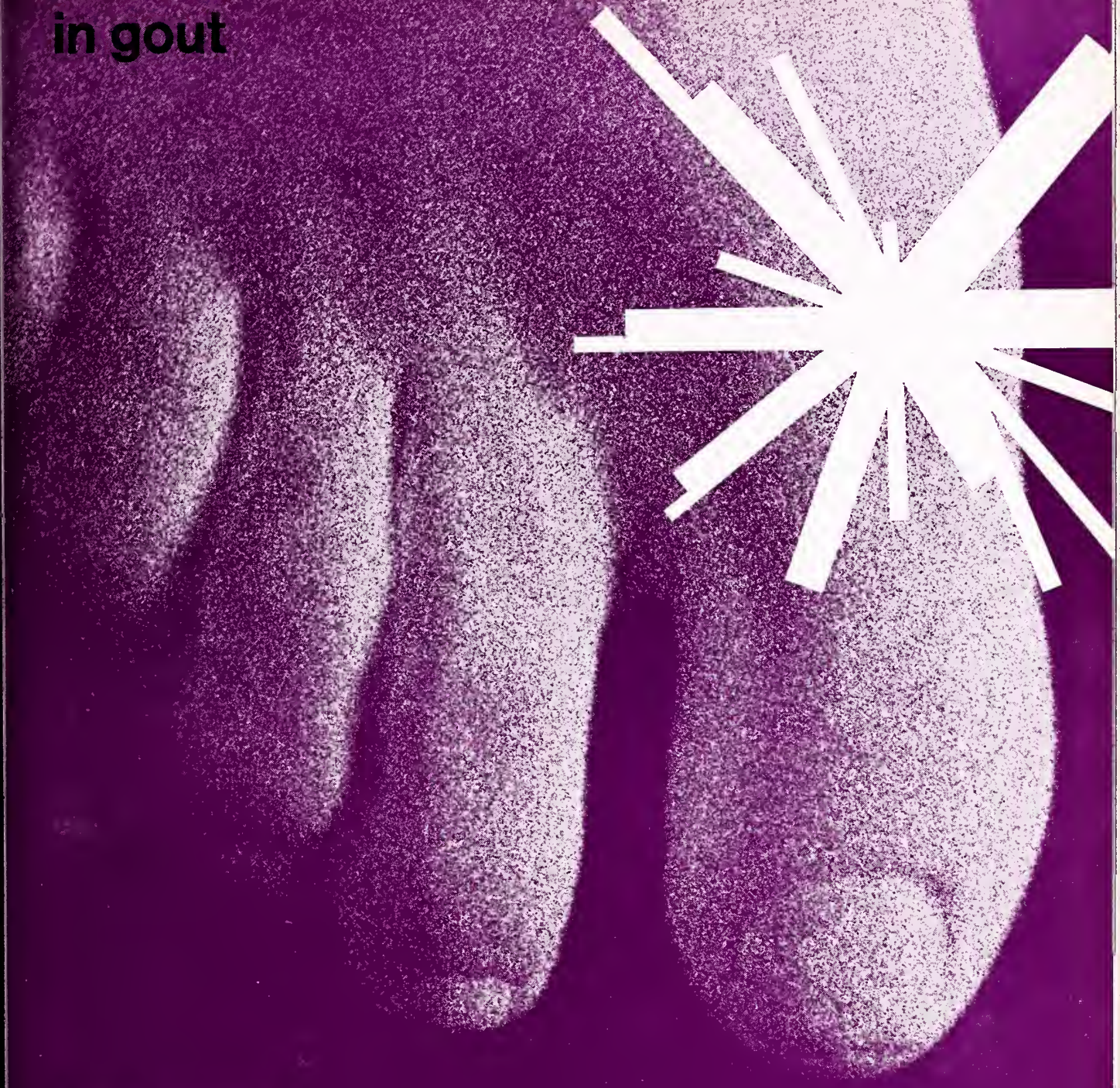
In mobilizing urate deposits, the drug may precipitate acute attacks of gout, urolithiasis, and renal colic, especially in the initial stages of therapy. Ensure adequate fluid intake and alkalinize the urine. With renal impairment, test renal function periodically.

Adverse Reactions
The most frequent are upper gastrointestinal disturbances. The drug may activate peptic ulcer. Rash occurs infrequently. Although not reported to date, blood dyscrasias are a possibility.

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in gout



Anturane*

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"The most effective
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uricosuric agents for
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Anturane, brand of sulfinpyrazone, was developed in the Geigy laboratories. Its pharmacologic activity is limited almost exclusively to increasing the urinary excretion of uric acid. For this reason, it is a drug of choice in chronic tophaceous gout and acute intermittent gout. It is not intended for relief of acute attacks of gout.

In most patients, the drug rapidly reduces serum uric acid levels to normal. This not only prevents new tophi but also mobilizes and promotes the excretion of urates already in the tissues. The reduction of tophi and periarticular crystals results in more mobile, less painful joints.

Anturane, brand of sulfinpyrazone, materially reduces the number and severity of acute attacks of gout. It may also be used to counteract hyperuricemia induced by certain diuretics.

Because of its potency, the drug is often effective in patients refractory to other uricosuric agents. Patients can usually be maintained indefinitely on it without cumulative effects or development of tolerance.

*Kuzell, W. C., et al.: Effect of sulfinpyrazone on serum uric acid in gout: a long-term study, Geriatrics 19:894, 1964.

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Most overweight patients could benefit from the appetite control provided by the prolonged anorexigenic-tranquilizing action of BAMADEX SEQUELS: anorexigenic action through the central stimulant effect of the amphetamine; tranquilizing action with only mild sedation through meprobamate; prolonged action through sustained release of active ingredients.

Contraindications: Hyperexcitable and prepsychotic states; patients hypersensitive to meprobamate.

Side Effects: Occasional allergic skin reactions may occur with meprobamate, accompanied by fever, nonthrombocytopenic purpura, angioneurotic edema, hypotension, or bronchial spasm. Drowsiness with or without ataxia and/or alteration in visual accommodation may occur. Effects of alcoholic beverages may be increased by meprobamate. Use with caution in patients with coronary or cardiovascular disease or severe hypertension. Prolonged use may result in dependence. Reactions can occur if drug is not withdrawn gradually.

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Butazolidin®
brand of phenylbutazone

in osteoarthritis



Geigy

Therapeutic effects
A number of investigators report improvement in about 75% of cases. Relief of pain and stiffness is the predominant response. Frequently, there is also a significant improvement in function. The beneficial effects of the drug are usually seen by the third or fourth day of treatment.

There is general agreement that milder cases of osteoarthritis are preferably treated by simple analgesics. In many patients, however, this mode of therapy fails to give sufficient relief. Because steroids are not very effective in this form of arthritis, phenylbutazone affords the drug therapy most capable of relieving the more severe cases. For best results, it is recommended that treatment with phenylbutazone be combined with physiotherapy and other appropriate supportive measures.

Dosage
The initial daily dosage in adults is 300-600 mg. in divided daily doses. In most instances, 400 mg. daily is sufficient for maximum therapeutic response. A trial period of one week is adequate to determine the effects of the drug; if there is no improvement, discontinue the drug. When improvement does occur, dosage should be promptly decreased to the minimum effective level: this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

Precautions
Before prescribing, the physician should obtain a detailed history and perform a complete physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning: If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Side effects
The most common side effects are nausea, edema and drug rash. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

Contraindications
These include: edema, hypertension, or danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient cannof be seen regularly, when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin® alka are contraindicated in patients with glaucoma.

Note: The physician should be fully aware of dosage, precautions, side effects and contraindications as contained in the complete prescribing information.

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Butazolidin
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Tablets of 100 mg.

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when a change in environment overwhelms him with anxiety

Failing health, financial difficulties, or the death of a spouse are among the reasons why elderly people may be obliged to leave their familiar surroundings. Moving in with children or entering a home for the aged may satisfy practical requirements but can be psychologically traumatic since emotional resilience tends to diminish with age.

Even when anxiety reaches overwhelming proportions, you can counteract it promptly with the potent tranquilizer—Atarax (hydroxyzine HCl).

The outstanding systemic safety record of Atarax makes it particularly suitable for geriatric patients whose drug tolerance is often low. The usual initial dosage in such patients is 50 mg. q.i.d. However, this tranquilizer is so well tolerated that dosage can be adjusted to meet individual requirements. The wide variety of dosage forms allows flexibility of administration from any standpoint—convenience, patient preference, or emergency requirements.

No age, of course, is exempt from anxiety and any number of circumstances can unleash it. Keep Atarax in mind for *all* your emotionally distressed patients—from under 6 to over 60.

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Side effects and precautians: The transitory drawsiness which may accur with hydraxyzine HCl usually disappears spontaneausly in a few days with cantinued therapy, ar is carrectable by dosage reduction. Dryness af the mauth may be seen with higher dases. Invaluntary mator activity has been reparted in haspitalized patients on higher than recammended doses. Hydroxyzine HCl may potentiate CNS depressants, narcotics such as meperidine, barbiturates, and anticoagulants. In canjunctive use, dosage for these drugs should be decreased. Because drowsiness may accur, patients should be cautianed against driving a car ar aperating dangerous machinery. **Parenteral Salutian Precautians and cantraindicatians:** This dosage form is intended anly far I.M. or I.V. administration and should not, under any circumstances, be injected subcutaneously or intraarterially. When the usual precautions far I.M. injectian have been followed, reports of soft tissue reactions have been rare. I.V. administration shauld be slow, no faster than 25 mg. per minute, and should nat exceed 100 mg. in any single dase. Particular care shauld be used to insure injection anly into intact veins; a few instances of digital gangrene occurring distal to the injection site have been attributed to inadvertent intraarterial injection ar periarterial extravasation, bath af which shauld be avoided. **Mare detailed prafessional informatian available an request.**

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Estelline, South Dakota is in need of another physician. New Hospital in town. Local physicians and community offers every assistance. Contact Dr. Marr, Estelline, South Dakota 57234.

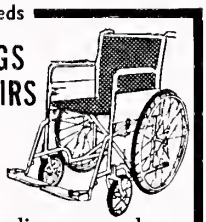
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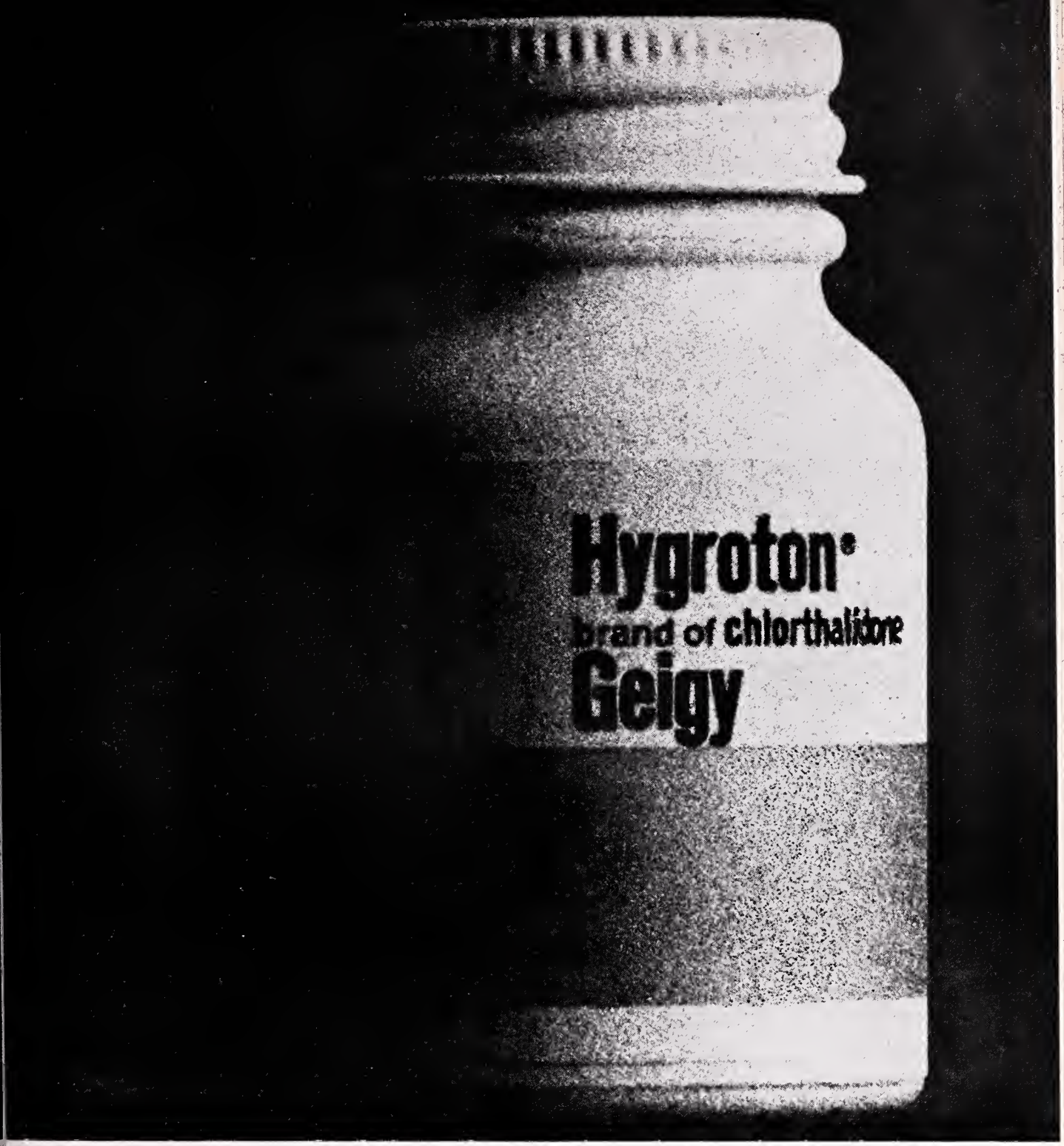
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Indications: Many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000.
For full details, see the complete prescribing information.

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Patients with edema.
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Patients you want to bring to dry weight.
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An eminent role in medical practice

- Clinicians throughout the world consider meprobamate a therapeutic standard in the management of anxiety and tension.
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Miltown® (meprobamate)

Indications: 'Miltown' (meprobamate) is effective in relief of anxiety and tension states. Also as adjunctive therapy when anxiety may be a causative or otherwise disturbing factor. Although not a hypnotic, 'Miltown' fosters normal sleep through both its anti-anxiety and muscle-relaxant properties.

Contraindications: Previous allergic or idiosyncratic reactions to meprobamate or meprobamate-containing drugs.

Precautions: Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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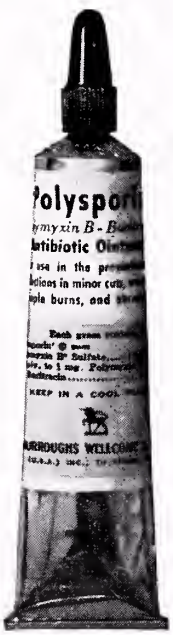
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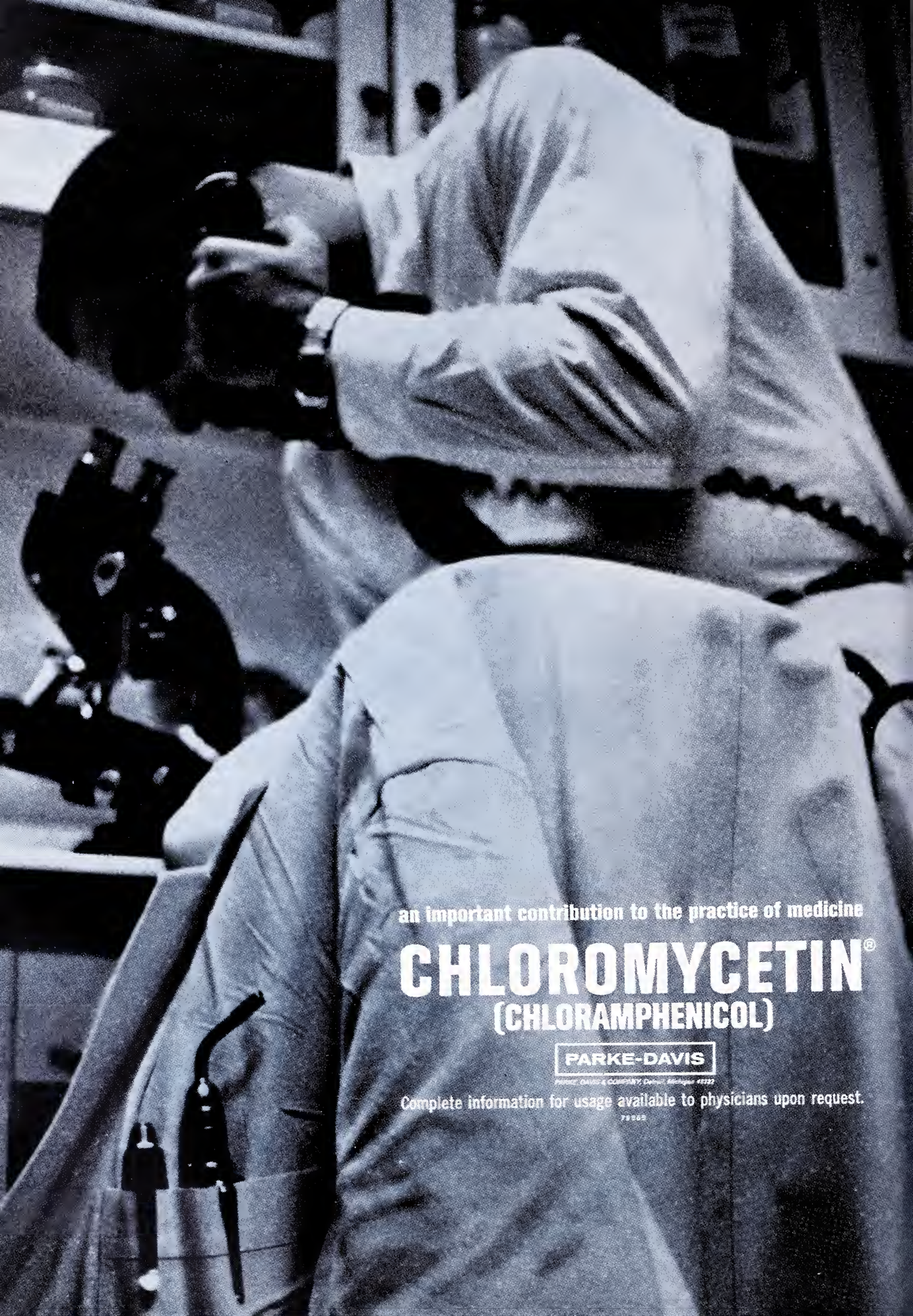
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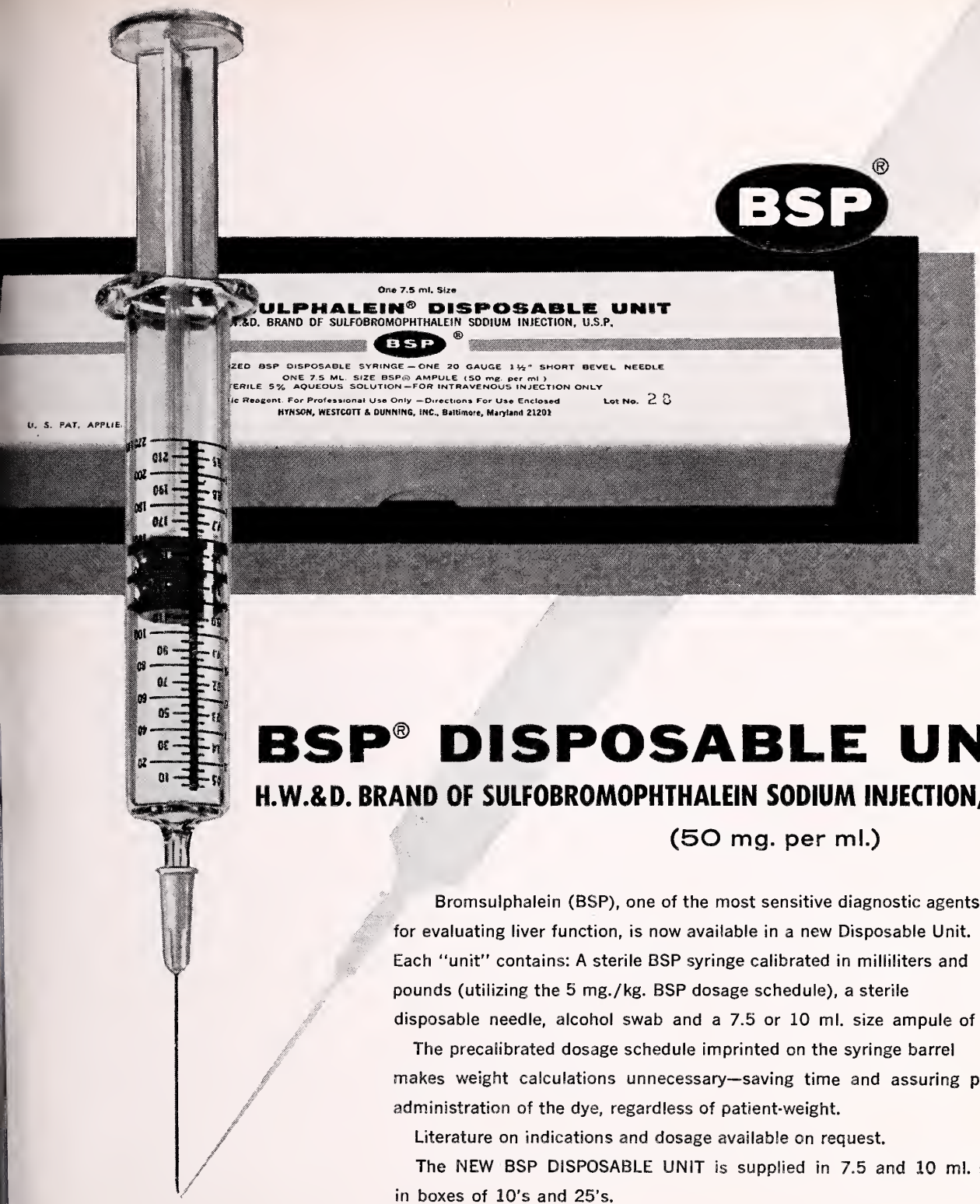
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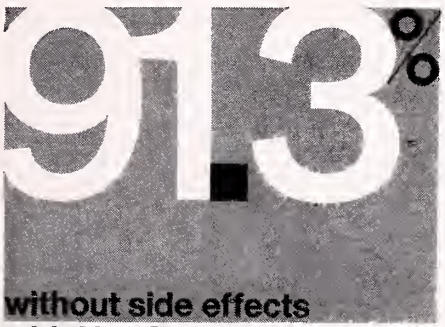
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References: (1) Carroll, G.: Urologists' Letter Club, June 1, 1964. (2) McDonald, D. F., and Short, H. B.: Address to the Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, New York, Oct. 26-28, 1964.

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Precautions
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In mobilizing urate deposits, the drug may precipitate acute attacks of gout, urolithiasis, and renal colic, especially in the initial stages of therapy. Ensure adequate fluid intake and alkalinize the urine. With renal impairment, test renal function periodically.

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The most frequent are upper gastrointestinal disturbances. The drug may activate peptic ulcer. Rash occurs infrequently. Although not reported to date, blood dyscrasias are a possibility.

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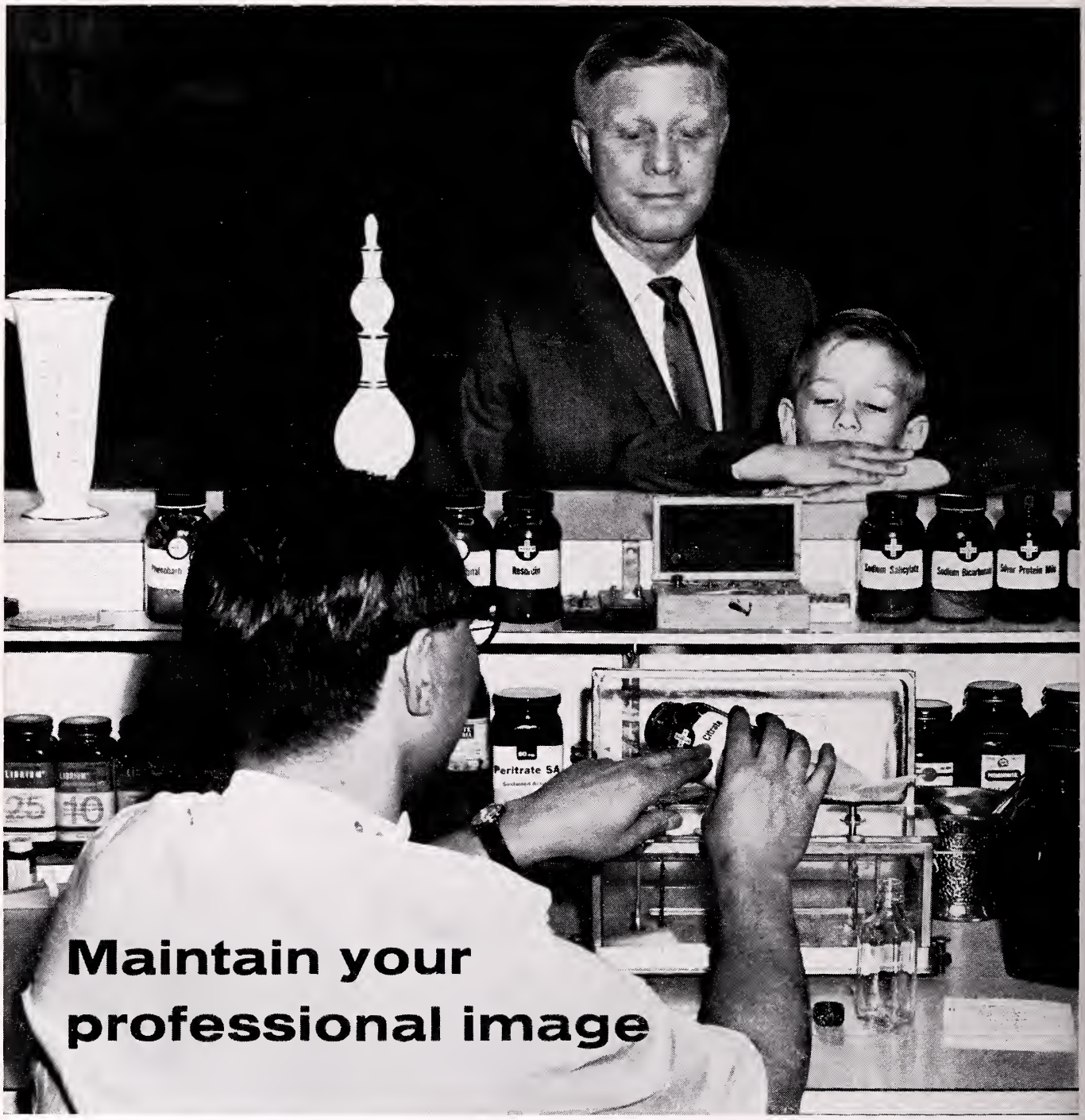
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*Kuzell, W. C., et al.: Effect of sulfinpyrazone on serum uric acid in gout: a long-term study, Geriatrics 19:894, 1964.

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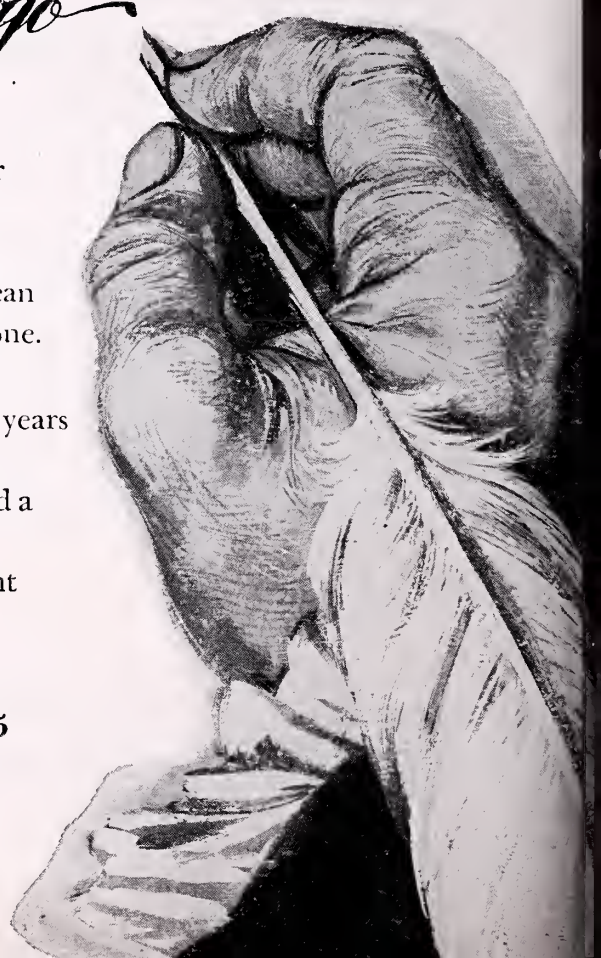
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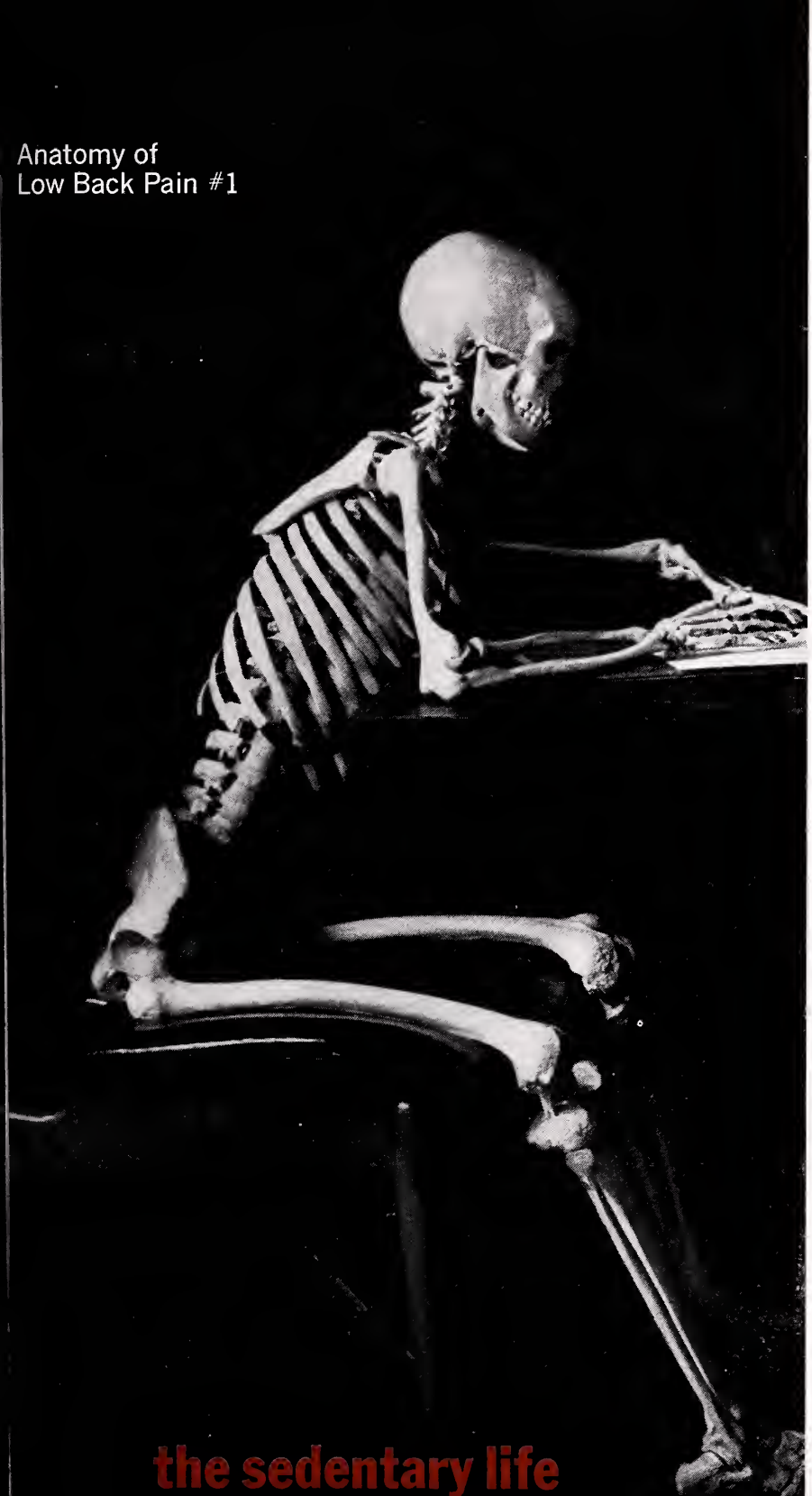
when President Washington signed the first U.S. patent law. For patents mean drug progress. For example, of the 604 important drugs introduced worldwide since 1941, the majority originated in the U.S. drug industry. By contrast, a major west European nation, which has no patent protection, contributed one.

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Anatomy of
Low Back Pain #1



the sedentary life is often the seat of low back pain

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Precautions: 'Soma', like other central nervous system depressants, should be used with caution in patients with known propensity for taking excessive quantities of drugs and in patients with known sensitivity to compounds of similar chemical structure, e.g., meprobamate.

Side Effects: The only side effect reported with any frequency is sleepiness, usually on higher than recommended doses. An occasional patient may not tolerate carisoprodol because of an individual reaction, such as a sensation of weakness. Other rarely observed reactions have included dizziness, ataxia, tremor, agitation, irritability, headache, increase in eosinophil count, flushing of face, and gastrointestinal symptoms.

One instance each of pancytopenia and leukopenia, occurring when carisoprodol was administered with other drugs, has been reported, as has an instance of fixed drug eruption with carisoprodol and subsequent cross reaction to meprobamate. Rare allergic reactions, usually mild, have included one case each of anaphylactoid reaction with mild shock and angioneurotic edema with respiratory difficulty, both reversed with appropriate therapy. In cases of allergic or hypersensitivity reactions, carisoprodol should be discontinued and appropriate therapy initiated. Suicidal attempts may produce coma and/or mild shock and respiratory depression.

Dosage: Usual adult dose is one 350 mg. tablet three times daily and at bedtime.

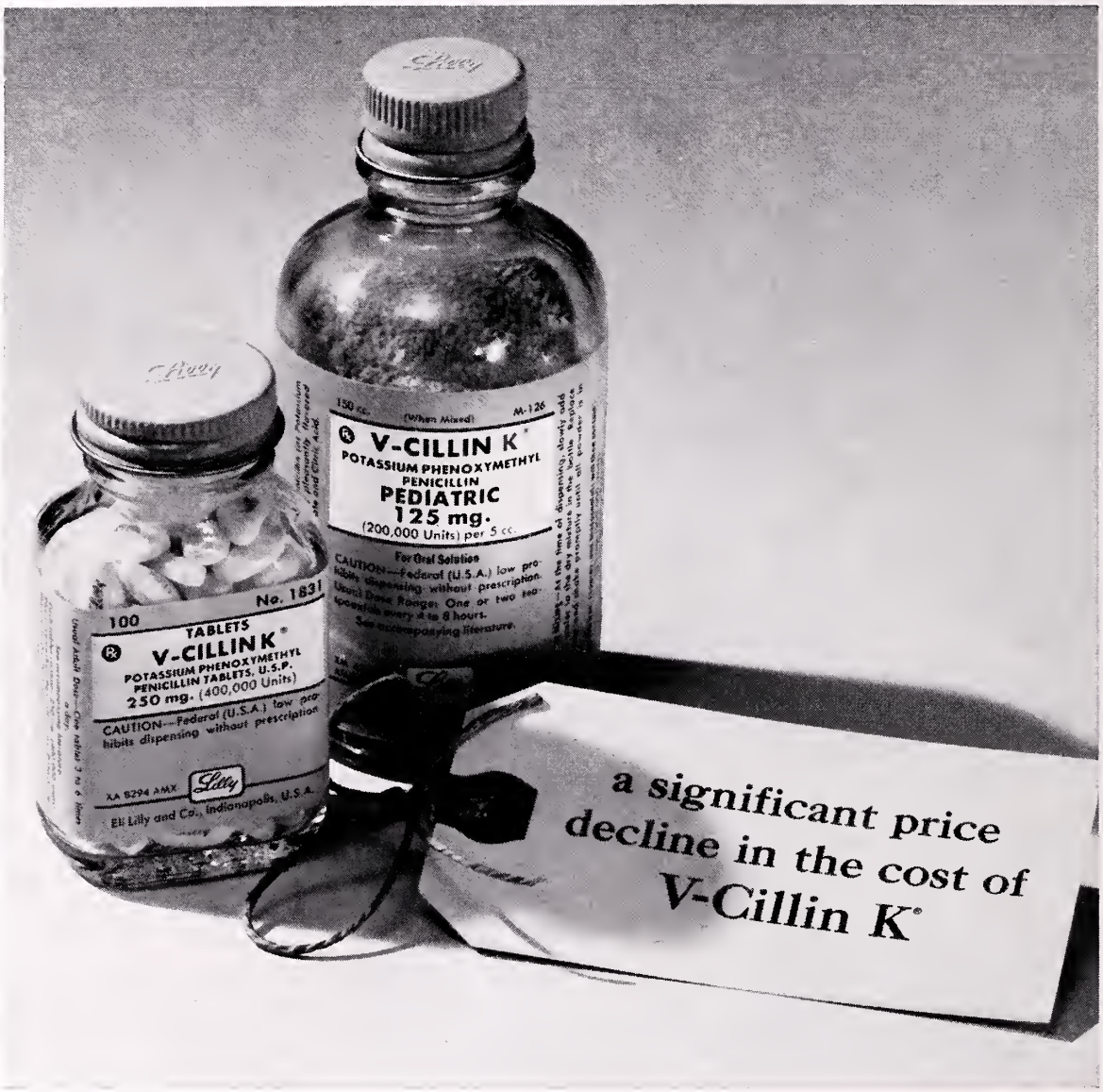
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PALEOPATHOLOGY IN THE DAKOTAS

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Yankton, South Dakota

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Paleopathology, defined as the study of diseases in bodies preserved from ancient times, is usually thought of as something which the student can explore only in the Middle East or South America. However, in the Dakotas there is an excellent opportunity to participate in this science and to make some most valuable observations. Burial grounds of various past Indian cultures are frequently discovered during the construction of roads, buildings, and reservoirs. Others have been carefully excavated by archeologists from the Universities of North and South Dakota and of other midwestern States, the Smithsonian Institution, (See Figure ♯1) and other organized groups. Unfortunately some burials have been invaded by amateurs who are more often "pot hunters" than archeologists.

By virtue of the fact that Indians still live here it is also possible to study diseases of peoples who lived in this territory at various periods in history and then to observe their descendants. A comparison of the evidence relating to specific diseases found in past generations with that in persons now living could provide some interesting insight into patterns of these processes.

The authors were privileged to engage in a large Paleopathology study when the human anthropological material which is in the William H. Over Museum of the University of South Dakota, specimens from the Missouri Basin Project of the Smithsonian Institution, and a third group of skeletons in the Museum of the Historical Society of North Dakota, were made available for examination purposes. The original intent of the project, conducted by a team of investigators from the Medical School and the Speech and Hearing Clinic of the University of South Dakota, was to determine the incidence of ear pathology in skulls from the Dakota Indian burials with special reference to the disease Otosclerosis with stapes footplate fixation. The results of these studies have been reported elsewhere. [1, 2, 3, 4, 5, 6, 7, 8]

In most of the burial specimens only bone was present, confining the study to osseous pathology. An examination was made of the skull and all skeletal remnants for any evidence of disease which might be manifest in bone. Despite long interment, some bones having been in the ground since about the time of Christ, the architecture and details were for the most part well preserved and identifiable. Pathological processes were often quite easily recognized. In some instances the diagnosis was aided by the use of radiographs.

The skeletal material evaluated came from four basic cultures:

1) The Dakota Historic (about 1700 to 1850 A.D.) of which there were only a small number of specimens,
2) The Arikara (about 1200 to 1830 A.D.) of which there were by far the greatest number of specimens,
3) The Middle Plains Woodland People (about 500 to 900 A.D.), the second most common culture represented; and
4) The prehistoric Indians who existed in this region prior to 500 A. D.

By virtue of the fact that the skeletal remnants were from many different cultures and different periods in time, it was possible to obtain an overall analysis of diseases during a long interval. For comparison there was a community unit of 255 persons, all from the Sully burial site, and representing an individual group of people from a single culture (Arikara).

This paper is concerned with a brief analysis of the types of pathological processes which



FIGURE 21. Photographs made at the Leavenworth Site (Arikara), located on the West edge of the Missouri River, about 5 miles northwest of Mobridge, South Dakota, at the time of excavations by the Smithsonian Institution during the Summer 1965, under the direction of Doctor William Bass.

A. A view looking southwest toward the river, from the bluffs, showing (Point "a") the ridge upon which Col. H. Leavenworth, in 1823, mounted his guns to fire into the Indian village, located at Point "b", now deep beneath the waters of the river. Point "c" indicates the burial site on the bluffs, overlooking the campsite, now 30 feet above the water level, but soon to be immersed.

B. Closeup view of the excavations seen in "A" above, showing the archeologists at work.

C. Excavation and recording of the findings following location of the burials situated about 100 yards northeast of those seen in "A" and "B". Note that the ground contour has been superficially disturbed by a bulldozer, opening the surface and assisting the location of the individual burial sites.

D. Doctor William Bass explaining the findings of a burial located in the cut seen in "C" to the members of the Smithsonian archeological group.

E. Cataloging the details of the burials found in the area seen in "C" and "D" above.

F. The partially excavated skeleton of a child. Note that the body has been buried in an extended position. The usual Arikara burials were in a flexed (foetal) position, the body often presenting the appearance of having been stuffed into a small hole. The extended position seen here would suggest some other cultural influence, possibly that of the White man.

G. A disturbed burial (demonstrated by the fact that the bones are not in anatomical relationship), suggesting that these remains had either been excavated at an earlier time or that this was a secondary burial, i.e., the body had been placed upon a scaffold for a time and then the bones had been interred at a later date.

TABLE #1 **INDIAN SKULLS — CULTURES**

	MALE	FEMALE	SEX UNKNOWN	TOTAL	TEMPORAL BONES
ARIKARA, So. Dak. General	74	52	4	130	251
ARIKARA, Sully Site (Smithsonian)	52	62	141	255	440
ARIKARA, No. Dak.	1			1	2
ARIKARA-Mandan (Siouan)	9	13	12	34	50
MANDAN, (Siouan)	10	16	19	45	79
SIOUAN-Sioux Historic (So. Dak.)	6	6		12	24
MIDDLE PLAINS WOODLAND (So. Dak.)	31	17	2	50	88
CULTURE UNDETERMINED (So. Dak.)	13	10	6	29	54
CULTURE UNDETERMINED (No. Dak.)	27	18	24	69	104
CULTURE UNDETERMINED (Smithsonian)	30	8	65	103	166
TOTALS	253	202	273	728	1,258

TABLE #2 **INDIAN SKULLS — AGE AND SEX**

	MALE	FEMALE	SEX UNDETERMINED	TOTAL
PREMATURE TO BIRTH			21	21
BIRTH TO 10 YEARS	1	1	187	189
ELEVEN TO 20 YEARS	5	26	24	55
TWENTY ONE TO 30 YEARS	103	103	33	239
THIRTY ONE TO 40 YEARS	99	48	2	149
FORTY ONE YEARS PLUS	45	24	6	75
TOTALS	253	202	273	728

were recognized from the Indian burials in these large collections, to serve as an aid to the many part time archeologist-anthropologists among the physicians of this state and to stimulate further interest in this subject. To facilitate presentation the various pathologies have been divided into sections. Each will include brief discussions of certain abnormalities and appropriate illustrations. Statistics relating to the cultures represented, ages, and sex will be found in Tables 1, 2.

TRAUMA—(PLATE -I)

Several instances of trauma were found in the bones from various portions of the skeletons. Included were healed fractures of the long bones and the skull, injury from arrow points, and evidence of recent fractures, probably fatal. In no instance was there anything to suggest surgery upon the bones.

PLATE I-A. S.D.U. 15109. Lateral view of the skull of 21-25 year old Middle Plains Woodland female showing a partially repaired fracture in the left parietal area (a). X-Rays indicated some healing, suggesting that the person had lived for a time after the injury. The defect in the skull in the frontal region (b) was caused by the tip of a shovel during the excavation. It might be conjectured that this person sustained a blow to the head which ultimately resulted in death, possibly through the formation of a subdural hematoma.[9]

PLATE I-B. N. D. 14039. A depression in the outer table of the left parietal bone of a 45-50 year old Mandan male, possibly the result of previous trauma. There was no evidence of trauma in other bones of the skeleton.

PLATE I-C. S.D.U. 16502. The skull of a 30-35 year old male of Historic Dakota origin found with an arrow point embedded in the left orbit. This must be presumed to have been the proximate cause of death. There was no other evidence of trauma to bones elsewhere in the skeleton.

PLATE I-D. Smiths. 9909. A fragmented skull of a 40-45 year old male found in an Arikara burial with a hole drilled into the squamous portion of the temporal bone. This was done by the Indians to attach a thong to the skull of a vanquished enemy so that it could be carried as a trophy. The hole in this specimen was the only evidence of man made defect in any of the 728 human skeletal specimens.

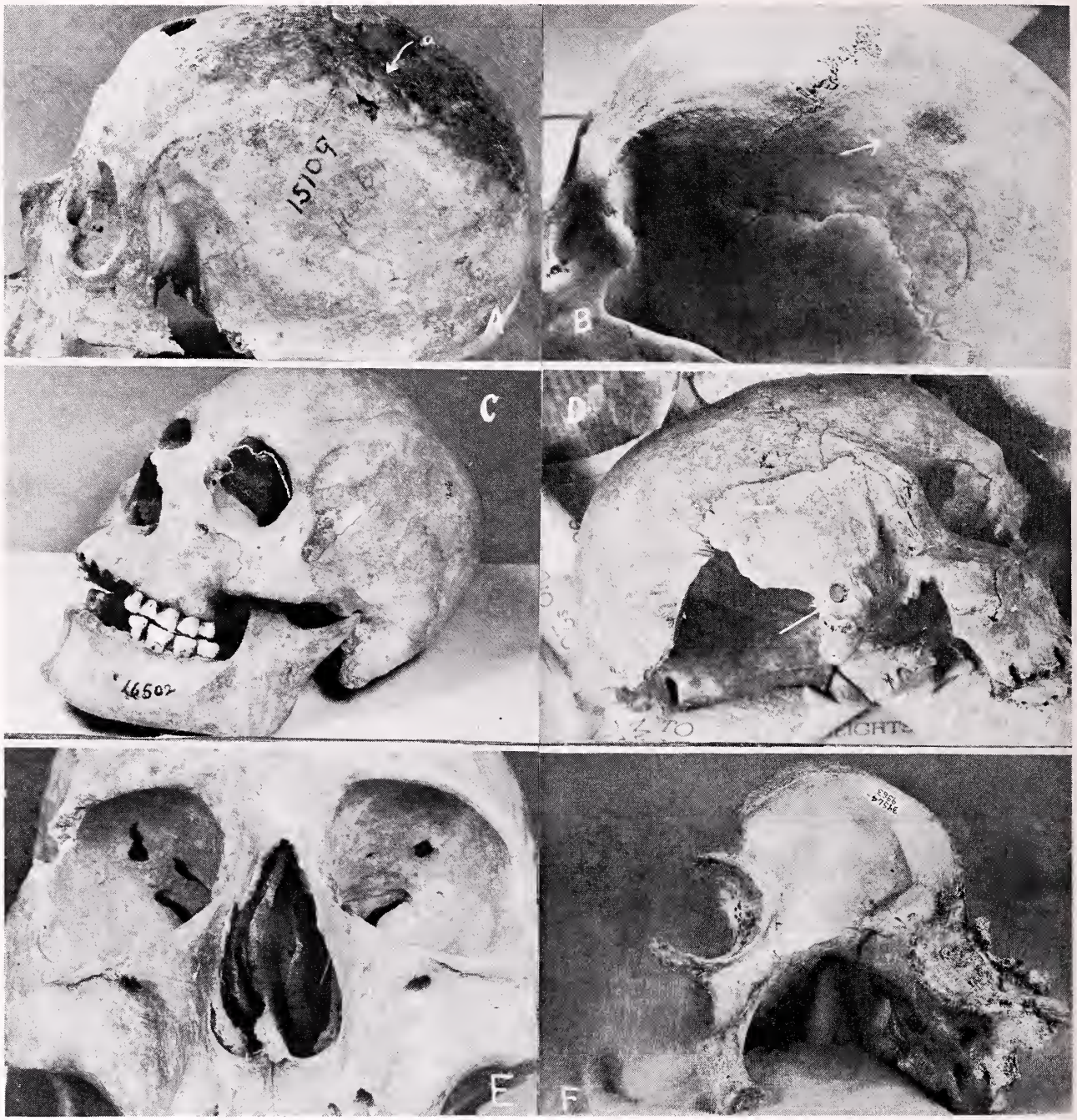


PLATE I

PLATE I-E. S.D.U. Facial view of the skull of a 30-35 year old Arikara male showing a moderate degree of deflection of the nasal septum. Warping of the bony portion of the septum was a very common finding in both males and females represented by these skulls, suggesting that trauma to the nose during the growth period must have been common. (See Table #3) Significant nasal septal deflection is usually found in about 33% of the adult males and about 10% of the adult females in the white population of this area today.

PLATE I-F. Smiths. 9363. Arikara male, age 50 years plus, showing evidence of fracture of the right hip with displacement of the acetabulum into the pelvis. There was also evidence of injury to this man's right knee. There is also definite evidence of arthritis of the sacroiliac articulation, seen in the photograph. This man's skull showed dental abnormality, (See plate IV-C), but no other evidence of osseous disease. The multiplicity of abnormalities in this person's skeleton would suggest that Indians who lived at this period in history were

TABLE #3

INCIDENCE OF NASAL SEPTAL DEFLECTION IN 365 INDIAN SKULLS WITH IDENTIFIABLE SEPTUMS

AGE	MALE	FEMALE	UNDETERMINED	
BIRTH TO 10 YEARS	1		2	
ELEVEN TO 20 YEARS	2	7	3	
TWENTY ONE TO 30 YEARS	33	37	4	
THIRTY ONE TO 40 YEARS	51	24		
FORTY PLUS YEARS	21	6		
TOTALS	108	74	9	= 191

able to sustain multiple injuries and other disease processes and still survive well into adult life.

CONGENITAL ANOMALIES (PLATE -II).

Some primitive cultures including the Plains Indians are reputed to have disposed of the "unfit" infants,[10, 11, 12] examples being those with congenital clefts in the face or mouth, and obvious bony anomalies. Despite this, definite defects which could only have been of congenital origin, not recognized during life, were present in these specimens.

PLATE II-A. Smiths. 9838. A view illustrating the inferior surface of the skull of a 22-26 year old Arikara male shows occipitalization of the anterior one half of the first cervical vertebra. Another example of fusion of the anterior one half of the first cervical vertebra to the occiput was found in a 25-30 year old Middle Plains Woodland male. (S.D.U. 15006). In view of the fact that this anomaly has been found in from 0.25% of 56,000 skulls from the Bolk collections in Amsterdam[13], to 1.67% of 180 skulls of Finnish Lapps[14], with a report of 0.47% of 1,055 American Indian Skulls[15], its incidence of 0.27% in this study is not unusual.

PLATE II-B. S.D.U. 18152. Male, Middle Plains Woodland Indian, 21-27 years old. This view shows an anomalous bony protuberance from the base of the skull in the area between the occipital condyle and the tip of the mastoid process of the temporal bone. This anomaly was 2.0 cm. in greatest length (posteriorly), had a basal A-P length of 1.1 cm. and a width of 1.55 cm. The articular facet measured 0.9 x 0.6 cm. It was 0.85 cm. from the medial surface of the mastoid process to the lateral edge of the anomalous bone. Unfortunately the first cervical vertebra of this specimen was not available for study. Torgerson[16] reports that a paracondyloid process, such as this, is found in 0% of the "Lapps" skulls and 0.11% of the non-Lapps skulls. The sketch of a paracondyloid process illustrated in his report resembles that noted here. The total abnormalities in the vicinity of the base of the skull here (3:728) is 0.41%.

PLATE II-C. Smiths. 9423. Arikara, Male, 35 years of age. Photograph of the distal right tibia and fibula showing fusion of these bones. In the skull of this individual there was also an osteoma in the frontal bone (See PLATE III-A).

PLATE II-D. Smiths. 39S149633. Sacrum from an Indian of undetermined culture and sex showing evidence of spina bifida occulta. This anomaly would probably not have been noticeable or caused symptoms during the life of the individual, and therefore would have been unrecognized.

PLATE II-E. Smiths. 5309 10676. Basal skull photograph of male Indian of undetermined culture, with two small defects in the hard palate. These were undoubtedly covered by the mucosa and represented submucous clefts of the palate, unrecognized during the life of the individual.[17] Although cleft palate defects have been reported in skeletal remnants from Indian burials in the past, they are not frequent.

PLATE II-F. Smiths. 9655. The fragmented maxilla of a 25-35 year old Arikara woman showing anomalous dentition in the form of an unerupted tooth lodged just beneath the floor of the nose, within the substance of the hard palate.

TUMOR—PLATE III.

Despite the fact that evidence of cancer has been reported in Archeological specimens elsewhere,[18, 19] in none of the specimens we examined was there found to be destruction of bone, either on gross examination or in radiographs, which might be accepted as evidence of malignant disease of bone or involving it. Benign new growths were quite common, the following being examples.

PLATE III-A. Smiths. 9423. An Arikara male 35 years of age whose skull shows a small osteoma near the midline of the posterior portion of his frontal bone. This skeleton also had

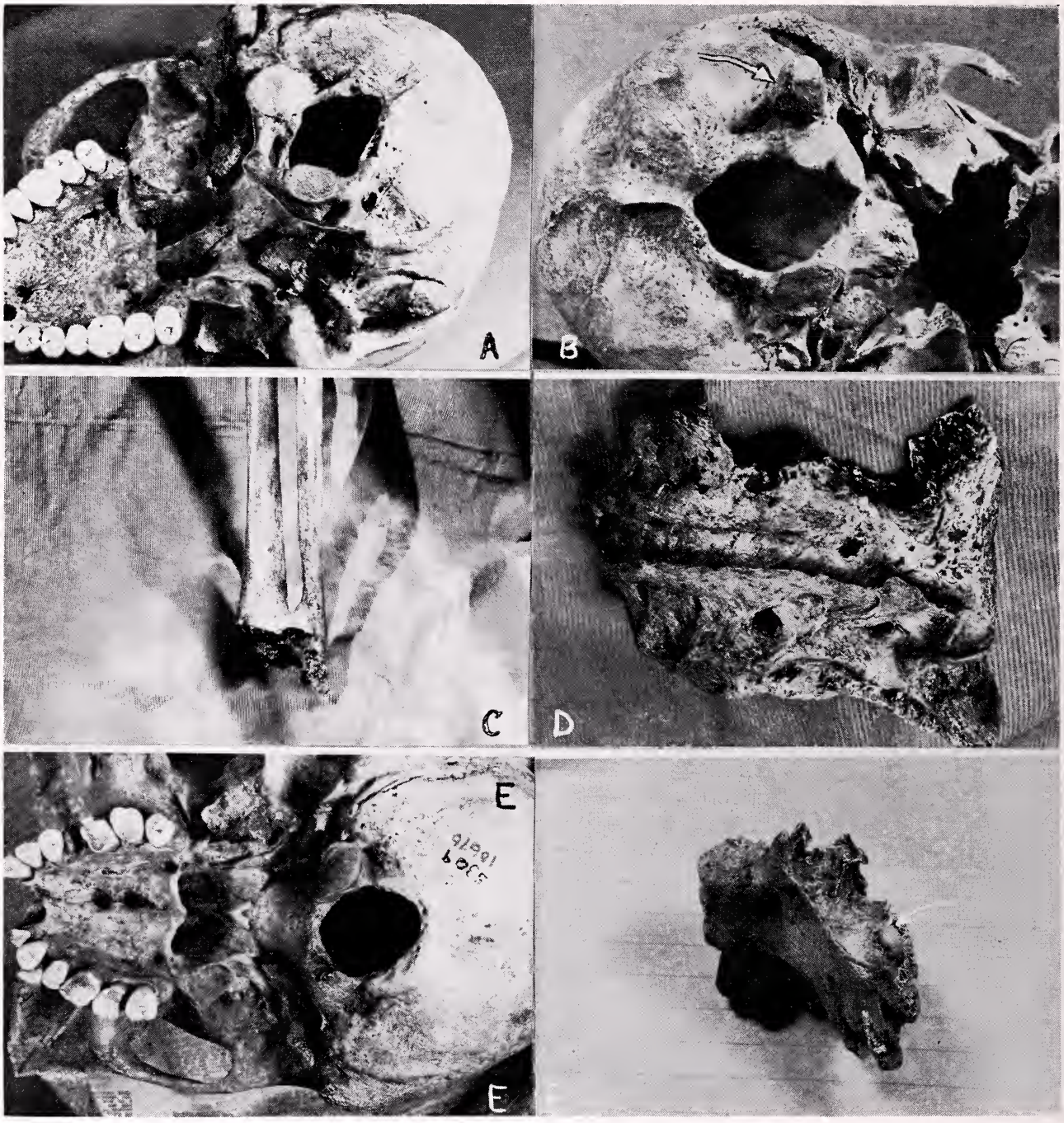


PLATE II

fusion of the distal portion of his right tibia and fibula (See PLATE II-C).

PLATE III-B. Smiths. 9580. Arikara male, 41 years plus. A photograph of the interior of the skull shows a small vascular lesion, probably an hemangioma, involving the inner table of the left parietal bone.

PLATE III-C. S.D.U. 13483. A right lateral view of the skull of an Arikara male, 25-30 years old, showing a spongy osteoma (exostosis) involving the inferior wall of the external auditory canal and causing about 50% obstruction to the canal. The other ear canal was normal.

PLATE III-D. N.D. 7653. Left lateral view of the skull of a male Indian, 40-45 years old, undetermined culture, showing three small hard, eburnated osteomas in the external auditory canal; one on the anterior wall, and two on the posterior wall. One of the latter two tumors was a small knob-like projection, while the other was a moderate sized ridge running medially along the posterior canal wall.

TABLE #4 LOCATION OF OSTEOMAS (EXOSTOSES) IN 33 EXTERNAL AUDITORY CANALS OF 21 INDIAN SKULLS OUT OF 728 SKULLS EXAMINED

AGE		MALES RIGHT	MALES LEFT	MALES BILATERAL	FEMALES RIGHT	FEMALES LEFT	FEMALES BILATERAL	SEX UNDETERMINED RIGHT	SEX UNDETERMINED LEFT	SEX UNDETERMINED BIL.	TOTALS
20 - 30 Years	S. D. U.	1									1
	SMITHS.		2	2				1	2		7
	N. D.					1	1				2
30 - 40 Years	S. D. U.		1		1						2
	SMITHS.			2							2
	N. D.			4							4
40 Yrs. PLUS	S. D. U.										
	SMITHS.										
	N. D.			3							3
TOTALS		1	3	11	1	1	1	1	2		21

Osteomas in the external ear canals have been reported to occur with variable frequency in different racial groups; low in the African Negroes and Europeans, high in the Melanesians, Polynesians, and in some American Indian cultures.[20] Hrdlicka[21, 22] reported that these tumors were found in 2 of 29 (6.9%) North Dakota Indian Skulls, 30 of 109 (27.9%) South Dakota Indian skulls, and 23 of 76 (30.3%) South Dakota Indian skulls from near Mobridge. Adis-Castro and Neumann[20] reported a similar high incidence of ear exostoses in skulls from the Hopewell Indian burials of the Illinois Valley. Despite the fact that the Indian skulls seen in this study came from the same general geographical area as those reported by Hrdlicka, the findings here (See TABLE 4) do not support the high incidence of this abnormality which he

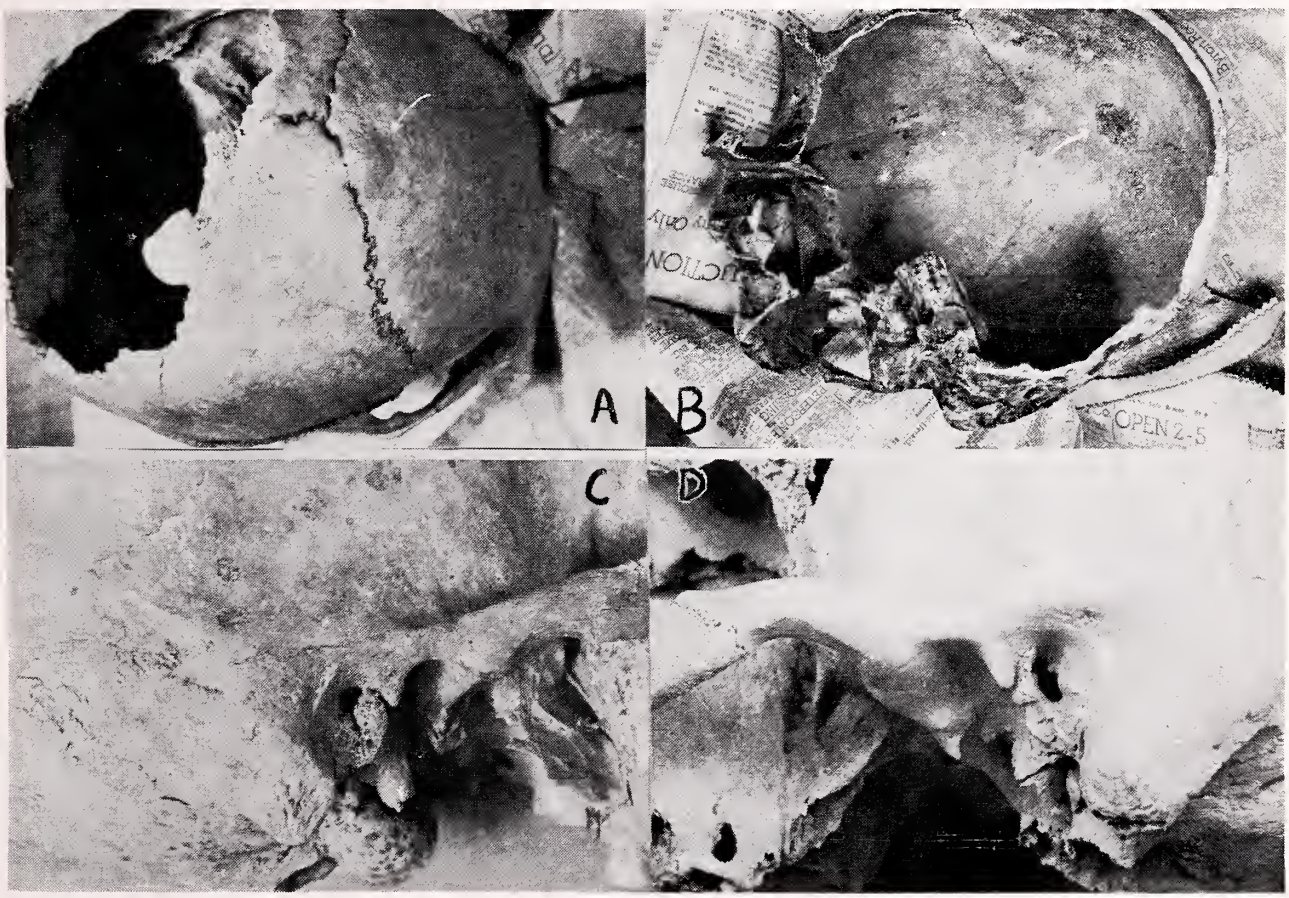


PLATE III

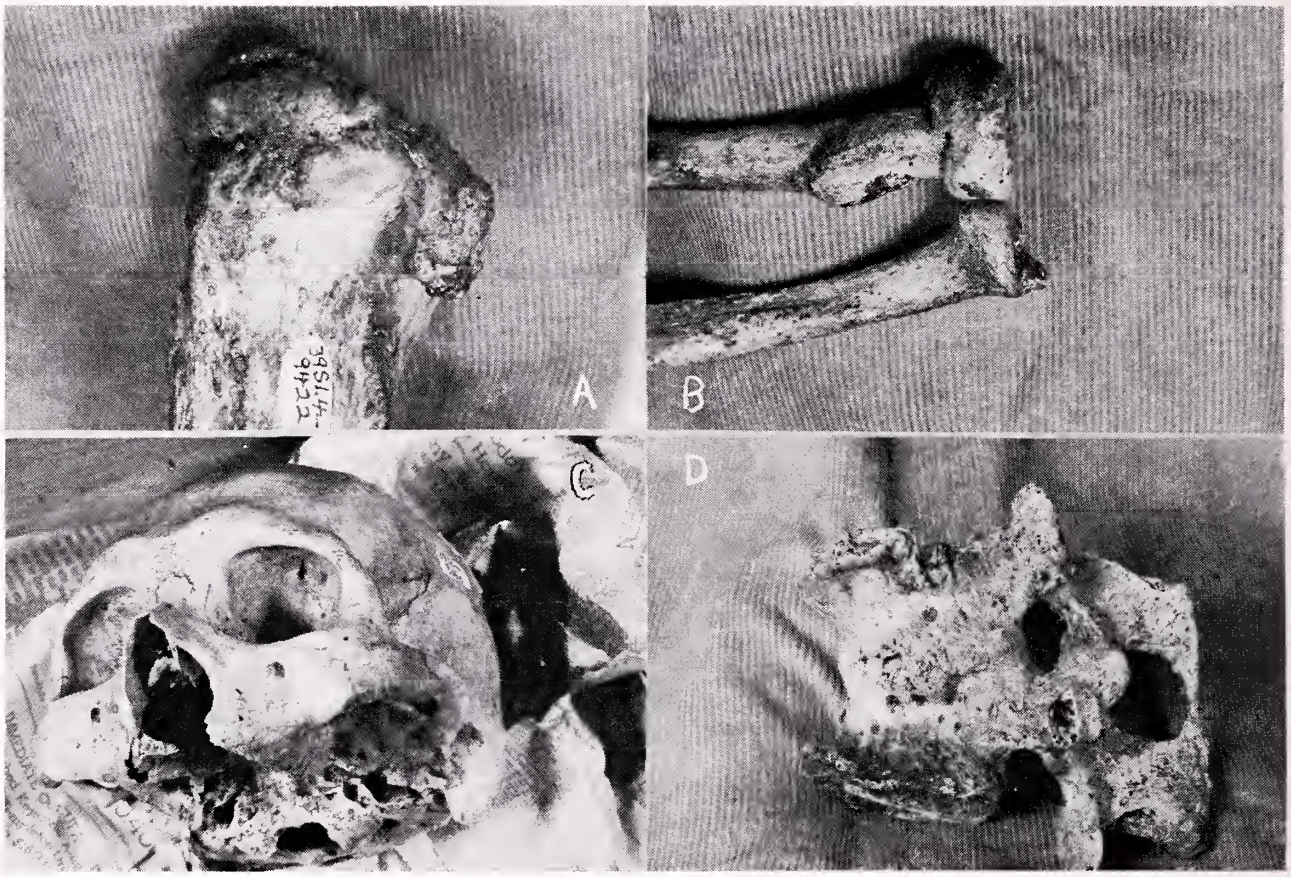


PLATE IV

reported. This discrepancy could possibly be explained on the basis that he had evaluated an isolated culture having an inbred trait, or that there was a difference of opinion between Hrdlicka and us as to what constitutes an osteoma.

The incidence of ear canal exostoses in skulls from the South Dakota University Museum collection was 3:221 individuals (1.3%); in the Smithsonian Institution collection it was 9:358 individuals (2.5%); and in the Museum of the North Dakota Historical Society specimens it was 9:149 individuals (6%), with an overall incidence of 21:728 (3%) for the entire series.



PLATE III-E

PLATE III-E. Smiths. 9368. Facial view of the skull of a 35 year old Arikara male showing a small osteoma protruding from the anterior surface of the maxilla just below the right infraorbital foramen. Also there is a moderate degree of warping of the nasal septum and antemortem loss of the majority of the upper teeth, suggesting the probability of pyorrhea.

DEGENERATIVE DISEASES—PLATE IV.

Various degenerative diseases have been reported in mummies from Egypt.[23, 24, 25] Many of these were demonstrable by virtue of the preservation of soft tissues in a dried or mummified state. In only a few instances were mummified tissues available in this study.

The average age at death and life expectancy of these Indians was considerably less than 40 years (See Table ♯2), but a sufficient number survived long enough to have skeletal alterations usually associated with the aging process. Arthritis involving various bones was quite prevalent. Some of this could have been post trau-

TABLE #5 **INDIAN TEMPORAL BONES WITH ALTERED MASTOID AIR CELL DEVELOPMENT (336 out of 672 examined) ACCORDING TO AGE**

AGE	CULTURE	DIPLOIC	MIXED	SCLEROTIC	TOTALS	
BIRTH TO 10 YEARS	ARIK. S. D. U.	1	3		4	
	ARIK. SULLY	24	5	2	31	
	OTHERS S. D. U.					
						35
ELEVEN TO 20 YEARS	ARIK. S. D. U.	2	7	2	11	
	ARIK. SULLY		5		5	
	OTHERS S. D. U.	3	5		8	
						24
TWENTY ONE TO 30 YEARS	ARIK. S. D. U.	4	43	8	55	
	ARIK. SULLY	2	21	4	27	
	OTHERS S. D. U.	1	40	10	51	
						133
THIRTY ONE TO 40 YEARS	ARIK. S. D. U.	2	26	3	31	
	ARIK. SULLY	3	40	3	46	
	OTHERS S. D. U.		18	2	20	
						97
FORTY ONE YEARS PLUS	ARIK. S. D. U.		10		10	
	ARIK. SULLY	6	21	3	30	
	OTHERS S. D. U.		6	1	7	
						47
TOTALS		48	250	38		336

matic, but most of it appeared to have been the change associated with osteoarthritis. Many skulls showed variable loss of teeth. Some was due to dental infection-pyorrhea (See PLATE V-B), but there were many instances of senile changes in the alveolar borders of the mandible and maxilla. Osteoporosis of the bones in the aged was also seen.

PLATE IV-A. Smiths. 9423. Arikara, female, 50 plus years old. The photograph shows evidence of hypertrophic arthritis at the superior end of the tibia. The skull of this woman was completely edentulous above and had only two teeth remaining in the mandible.

PLATE IV-B. Smiths. Distal ulna and proximal radius from the right arm of an unidentified Indian who belonged to an undetermined culture, showing hypertrophic arthritic changes in the head of the radius.

PLATE IV-C. Smiths. 9363. An inferior view showing the facial portion of the skull of a 50 plus year old man with complete loss of teeth from the upper jaw. All except two teeth were missing from the mandible. The nasal septum was markedly warped producing considerable obstruction to the right nostril. The postcranial skeleton of this man showed a congenital dislocation of the hip, illustrated in PLATE I-F.

PLATE IV-D. Smiths. 9437. Fused lumbar vertebrae of a 41 plus year old Arikara woman with severe hypertrophic arthritis. This specimen also had a mild degree of nasal septal deflection but no other bony abnormality.

INFECTIONS—(PLATE V).

PLATE V-A. N.D. 9329. A view of the left maxillary area of a 55-60 year old Mandan-Arikara man showing a defect in the alveolar ridge indicating an apical tooth abscess during the life of the individual. This skull also showed marked warping of the nasal septum with considerable obstruction to respiration, and bilateral ear canal osteomas similar to those seen in (Plate III-D). No other bony abnormality was present.



PLATE V

PLATE V-B. S.D.U. The right side of the mandible and maxilla of an unidentified Indian male showing ante-mortem loss of teeth above and below, probably the result of dental infection (pyorrhea). This individual was 30-35 years of age. No other bony abnormalities were present.

PLATE V-C. Smiths. 9634. Arikara male, 40 plus years old. The photograph shows extensive destruction of the bone of the right side of the face, involving the maxilla, nasal, ethmoid, lacrimal and frontal bones. The type of destruction and its extent would suggest a severe fulminating infection probably originating in the sinuses (ethmoid or maxillary), followed by osteomyelitis of the facial bones with generalized toxemia, as the proximate cause of death. Note also that the nasal septum is deflected to the left side with considerable obstruction to respiration. No other bony abnormality was found in the skull or the post-cranial skeleton.

INFECTIONS, EAR (PLATE VI).

Although there is some debate as to the exact mechanism whereby it occurs, most otolaryngologists and radiologists today feel that a poorly pneumatized mastoid system is either the result or the cause of repetitious middle ear infections during the period of development of these air cells. The alterations seen in the temporal bone structure patterns on radiographs can be used as a criterion to establish the incidence of middle ear disease in the Indian skulls from the South Dakota burials. Fifty percent of six hundred seventy-two temporal bone radiographs taken of skulls in the South Dakota University collection and the Smithsonian Institution collection (a Law and a Stenvers view being obtained in each instance See Table ♯5) showed evidence of altered mastoid air cell development. This would suggest that about one half of the individual Indians represented in this series had definite middle ear disease during early childhood.

PLATE VI-A. S.D.U. 13484. Law X-Ray view of the left mastoid area of a 30-35 year old male Arikara Indian showing a well pneumatized air cell pattern. Note the evidence of damage to the skull from burial visible on the radiograph, but the excellent detail of the remaining bones.

PLATE VII-B. S.D.U. 21294. Stenvers view of the right temporal bone region of a 21-26 year old Arikara female showing mixed type mastoid

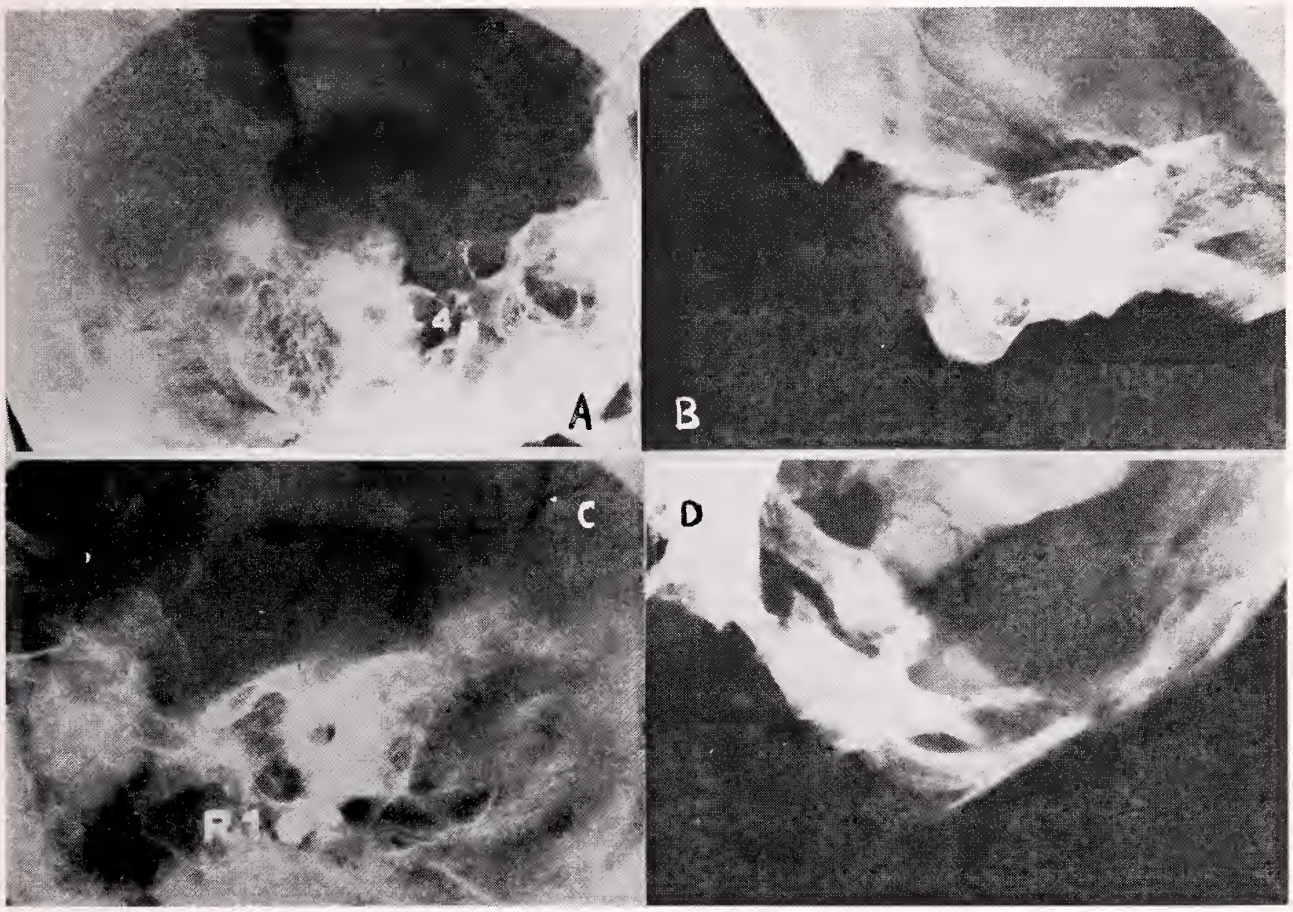


PLATE VI

air cell pattern strongly suggesting the presence of significant ear infections during the pneumatization of the mastoid (birth to 4 years).

PLATE VI-C. S.D.U. Law view of the mastoid area of a 35 to 40 year old Middle Plains Woodland woman showing sclerotic changes in the mastoid area, indicating the presence of infections in the middle ear and mastoid during childhood.

PLATE VI-D. S.D.U. 4612. Stenvers view of the left mastoid of a probable Middle Plains Woodland Indian woman who was 18-22 years of age at the time of death, showing a diploic mastoid tip, suggesting arrested development of the air cell system by infections in the middle ear during childhood.

NEURO-PSYCHIATRIC DISEASE ?? — (PLATE VII)

Paul Guggenheim[26] has discussed hypertrophy of the masseter muscle and bruxism, and reported that this occurs frequently in individuals who clenched their jaws during periods of emotional stress. This occurred most often when the subjects were suppressing or repressing hostile feelings. Guggenheim also indicated that X-Rays of the mandibles in these persons frequently show protruding mandible angles and hyperostosis of the angles of the mandible.

PLATE VII. Smiths. 39P01-S61. Male Indian 25-30 years old of undetermined culture. The three photographs show marked flaring of the bone in the area of the angles of the mandible and definite hypertrophy of bone in this region. There is also noticeable accentuation of the malar prominence, the inferior margin of the zygomatic bone and the zygomatic arch. The zygomatic arch is bowed laterally on the left, absent on the right side. These findings would suggest that there had been tremendous hypertrophy of the masseter and temporalis muscles during the life of this individual. The lateral X-Ray view of the skull shows no evidence of enlargement of the sella turcica as would be seen if this were an instance of pituitary tumor but does show hypertrophy of the bone in the region of the angle of the mandible. If



PLATE VII

the tenets advanced by Guggenheim be true, this may represent an instance of primitive frustration in a long dead Indian, manifested by bony changes in his mandible and left zygomatic bone.

SUMMARY AND CONCLUSIONS

A brief documentation and resume of the recognizable pathological changes seen in many skeletons removed from Indian burials of South and North Dakota has been presented. The availability of a considerable number of specimens, especially the large group of individuals who had been removed from a common community burial, provided an unexcelled opportunity to conduct a careful, thorough analysis of these skeletons for specific diseases. Because of the complete information relating to the cultures which was available, a reasonably accurate statistical analysis of the findings was possible. The findings presented here will not assist the average physician in his every day practice of medicine. However, it is hoped that the information herein contained will be interesting. Often a farmer or a rancher brings Indian relics to his family doctor's office, for identification. Perhaps in the future physicians will examine these relics carefully, looking upon them as a source of pathology. If there is doubt regarding the origin and the importance of any specimen, the services of the Museum of the University of South Dakota are available.

Anthropology and Archeology are fascinating sciences and hobbies. However, if inadequately documented, poorly conducted excavations are done by untrained individuals, valuable artifacts, some most important in the reconstruction of the history of ancient civilizations, are lost. In any instance where Indian relics are uncovered, physicians can be instrumental in discouraging the "pot hunters" who so frequently defile the burials, stealing artifacts for their own personal satisfaction and often losing valuable archeological specimens or information. It is hoped that the physicians of South Dakota will become interested in Anthropology, Archeology, and Paleopathology, and will pursue this most fascinating pastime. This region has a rich heritage in Indian lore and was the domain of many different, colorful Indian cultures. A study of their activities, their artifacts and their health patterns should provide many interesting hours.

ACKNOWLEDGEMENTS:

Sincere thanks and acknowledgement of helpful assistance in this project are extended to Doctor Wesley Hurt, Mr. Jay Brandon and Mr. Robert Gant of the William H. Over Museum of the University of South Dakota, Doctors Wil-

liam Bass, Robert E. Stephenson, and Mr. Walter H. Birkby of the Smithsonian Institution Missouri Basin Project, Mr. Norman Paulson and Mr. Vern Erickson of the Museum Staff of the State Historical Society of North Dakota; to Dean Walter Hard, School of Medicine, University of South Dakota for financial assistance; to the Eastman Kodak Company for a donation of X-Ray film used in the project; to Doctor Thomas Eyres of Vermillion, sincere thanks for the use of the Student Health Department's X-Ray machine to make films of this most unusual group of subjects.

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*COMMON FRACTURES OF THE HAND— INJURIES OF THE HAND

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Fractures of the terminal phalanges are not difficult to manage. If the extensor tendon is not injured as denoted by dropping of the terminal phalanx of the finger then a simple protective splint of aluminum plastic material or even of wood may be used. Ordinarily, it is not necessary to drill the nail in order to release the blood under it. Drilling the nail is painful, it may cause infection and it is rarely effective in evacuating a hematoma of the finger.

For avulsions of the finger tip the best treatment in my experience is usually to allow the wound to granulate in. If bone is exposed the edges of the bone may be trimmed slightly to make it easier for the scar to contract down.

For avulsions of the extensor tendon with or without a flake of bone attached a simple short splint is the best method of treatment. The splint is made of padded aluminum and is placed on the volar side of the finger. It must be short. It cannot project more proximally than the proximal interphalangeal joint. The splint must be kept on a long time — from four to six weeks. The length of time is not arduous, however, for the splint is so short that it does not interfere with the activities of the patient to any great extent. Relaxation of the lateral bands that go peripherally to the distal phalanx takes place as a result of the simple flexion of the distal interphalangeal joint. Other longer splints and casts are not necessary for this injury.

Treatment for many fractures of the middle and proximal phalanges can be very simple. Furlong has advised that proper realignment of the fractured finger can often be secured by taping the injured finger to the adjacent one. A small piece of cotton is put between the two taped fingers and the tape is left off the joint itself. Taping the fractured finger to the next one helps assure the proper direction of the finger. The axis of motion of the finger is not straight normally but each finger tip points toward the scaphoid bone as the finger is flexed into the palm of the hand.

When rigidity is required at the fracture site a plaster cast enclosing the fractured finger, the hand and wrist up to the mid-forearm is applied. Usually the finger is placed in a position of flexion for fractures of middle and proximal phalanges. Only rarely is traction of fractures of the finger or for that matter metacarpals necessary or desirable. When it is used traction should be by small pieces of Kirshner wire passed through the distal or middle phalanx of the finger. This is attached to a curved outrigger piece of coat hanger wire attached to the plaster cast. The finger is in jeopardy by virtue of the pressure of the splint on the volar side of the finger as well as from the Kirshner wire itself where this passes through the phalanx. Skin traction in my experience cannot be secured firmly enough to stay on and be of any value.

Where proper reduction cannot be secured by the application of a plaster cast after manipulation of the fracture, open incision of the fracture site and transfixion of the fracture fragments by several small Kirshner wires is usually preferable to the use of traction. When open reduction and metallic fixation of the fracture is performed, often early motion of the fractured finger can be done.

What has been said about fractures of the proximal and middle phalanges applies almost completely to metacarpal fractures. Metacarpal fractures must be held in a position of extension, however, in contradistinction to the other finger fractures mentioned above in most cases. When the plaster cast is used, extending from the mid-forearm to the distal phalanx of the finger, the metacarpo-phalangeal joint is kept in extension. The two interphalangeal joints are held slightly flexed, however, since it is not necessary to hold them in the unphysiologic position of extension for the fracture to be maintained in good position.

Instead of traction for the unstable fracture of the metacarpal, immobilization by either intramedullary Kirshner wires or by Kirshner wires transversely fixing the displaced fragment of bone to the adjacent metacarpals is indicated.

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* Presented at the South Dakota State Medical Association Annual Meeting, May 18, 1965, Watertown, South Dakota.

The wires are cut off under the skin. Threaded wires are preferable for use when they are placed transversely across the metacarpals from metacarpals to the others. Unthreaded wires are more apt to slide out of the bone than are the others.

Danger is present if the fractured metacarpal head is fastened in a markedly flexed position in a plaster cast as described by Jahss. The basis for this position was the use of the flexed proximal phalanx to push the depressed metacarpal head dorsally. Reduction is easy by this method but intractable flexion contractures of the proximal interphalangeal joint as well as pressure are on the finger resulting from this method of treatment.

Beware of dislocations of the carpal bones. It is easy to overlook a dislocated semilunar, especially if the patient has other injuries. Often the x-ray film is not taken in a careful lateral position or one's attention may be centered on the fracture of the shaft of the radius more proximally that it is not easily visible. Even when an obvious fracture of the scaphoid is present, there may be an associated fracture-dislocation of the carpus. Late reductions are very difficult. The earlier the diagnosis is made, the more likely is the patient to have a functionally satisfactory wrist.

Navicular fractures must be suspected, and if no fracture line is seen in the x-ray film, the patient's wrist should be x-rayed again in two weeks time. In the interim it does no harm to have the patient wear a splint for his painful swollen wrist for the two week waiting period.

For the patient who has delayed union of a fractured scaphoid the application of a short forearm cast should be tried and persisted in for many months. McMaster has shown that even where the non-union has been present for many years a goodly number of these will unite with immobilization for several or many months.

Fractures of the base of the 1st metacarpal with subluxation of the carpo-metacarpal joint can usually be managed by closed reduction and by holding the reduced fracture in a plaster cast. Charnley has emphasized the rigidity that is obtained when a three point pressure cast is employed for this and other fractures. Although some slipping of the fracture site does take place, often the remaining position is still compatible with good function of the thumb and hand. One usually does not need anatomic position for this fracture although one should strive for it.

Fractures of the distal end of the radius, Colles fracture, deserve special mention. The patient who sustains this fracture and is younger than 75 or thereabouts usually expects to have a cosmetically satisfactory wrist as well as a functionally good one. Certainly in the young adult or middle-aged person anatomical reduction should be sought for. The use of the hand varies directly with the anatomical result of the final result usually. Fortunately, nature is kind and a useful wrist can be had where marked deformity is present.

In the usual fracture at the distal end of the radius the most important part of the reduction is to disimpact the fracture well and to place the hand in marked pronation. I have described a method preventing to some extent the late collapse of the fractured ends by prophylactic wedging of the cast at the wrist within the first two days after the reduction, before the slipping has taken place.

The reverse Colles fracture is easily mistaken for the Colles fracture. This Smith fracture must be reduced in supination and dorsiflexion.

The Barton fracture, where the dorsal or volar corner of the radius breaks off must be treated carefully. Fracture of the dorsal lip requires a position of dorsiflexion and of the volar corner of palmar flexion usually.

Of course emphasis on early finger and shoulder motion of the injured hand is of paramount importance.

Anesthesia: General anesthesia for all fractures of the hand is usually to be preferred. Reduction is more certain when the patient is well relaxed and there is less risk of dangerous swelling when a general anesthetic is used.

Occasionally where the fracture involves the 5th finger, injection of the ulnar nerve behind the elbow is acceptable and saves the patient the cost of hospitalization.

Motion is of paramount importance in dealing with injuries of the hand. All joints of the hand that are not immobilized by the plaster or metal pins must be moved many times during the day, starting from the first day of the injury. No joint should be included in the plaster that is not essential. The patient must be urged to move and stretch his shoulder joint from the first day of injury. The importance of early active motion and exercises by the patient becomes greater as his age past 30 increases.

PRESIDENT'S PAGE



Dear Doctor Members:

The public image of the doctor is rapidly undergoing a tremendous change, as the people with the "fictitious great society" as their guiding light are evaluating the quality of the doctor's medical care.

The public image of the family doctor has always been held in high esteem, possibly in the past, because the medical profession was composed of great humanitarians who seemed the most resourceful of the professional people. Medical care has in the past been very personal and therefore a supreme loyalty prevailed between the patient and his doctor.

Many changes have taken place in recent decades and the public image of the doctor is changing with the times. The recent Congress with the Washington echelon has made it a high priority project to relentlessly degrade the public image of the doctor so that it may further the goals of the great society without particular rhyme or reason as to the final effect on the quality of medical care.

They have questioned at length the public's loyalty and faith in the actions of the doctors, the only profession able to satisfy their need and hopes for good medical care. More and more the news media, television and radio with their persistent ridicule and satirical editorials are undermining the general public, as they follow the orders of the Johnson mandate like a small boy will at times follow the instructions of his idolized big brother.

We, as South Dakota doctors, have so far partially escaped the Johnson purge, but we must work diligently to set up our defense for the onslaught now aimed at us. We must now take the offensive by continuing to furnish our patients good medical care as we daily educate and guide them to meet this onslaught of the great society.

The message must be insidiously explained for slow but sure penetration on a public completely dependent on a service and product that only we, as doctors, can administer to them.

Fraternally yours,

Paul Hohm, M.D.
President

THE SEVENTH DISTRICT MEDICAL SOCIETY OF SIOUX FALLS

ANNOUNCES A SYMPOSIUM

on

Tuesday, November 2, 1965

The Sheraton-Cataract Hotel — Sioux Falls, South Dakota

MORNING SESSION—Ballroom

9:00	Registration — All day	
Moderator:	Everett W. Sanderson, M.D.	
10:00-10:40	Edema of Obscure Origin	James B. Donaldson, M.D. Professor of Clinical Medicine, Temple University School of Medicine; Director, Division "B", Philadelphia General Hospital, Philadelphia
10:40-11:20	Appraisal and Management of Renal Failure	Arthur Grollman, M.D. Professor and Chairman, Department of Experimental Medicine, University of Texas, Southwestern Medical School, Dallas
11:20-12:00	Questions and Panel Discussion	
12:30- 2:15	Luncheon for physicians and wives — Ballroom	
	Chairman	Richard Leander, M.D.
	Speaker "Why Drink?"	Earle Milliard Marsh, M.D. Assistant Clinical Professor of Obstetrics and Gynecology, University of California Medical Center, San Francisco

ALL PHYSICIANS ARE INVITED TO ATTEND

No fee is required for attendance at scientific sessions, luncheon or reception.

AFTERNOON SESSION—Ballroom

Moderator:	Dorence L. Ensberg, M.D.	
2:30- 3:10	Problems in Pediatric and Adolescent Gynecology	Kermit E. Krantz, M.D. Professor and Chairman Department of Gynecology and Obstetrics; Professor of Anatomy, University of Kansas School of Medicine, Kansas City
3:10- 3:50	What Radiation for Tumor Management?	L. Henry Garland, M.D. Clinical Professor of Radiology; Associate in Cancer Research, University of California School of Medicine, San Francisco
3:50- 4:05	Recess	
4:05- 4:45	Questions and Panel Discussion	
4:45- 5:45	Reception — Oak Room	

WIVES OF PHYSICIANS ARE WELCOME AND ENCOURAGED TO ATTEND

This Symposium is made possible by a grant from and with the cooperation of Lederle Laboratories



DISPLAY PRESENTED AT THE SOUTH DAKOTA STATE FAIR, HURON, SEPTEMBER 4-9, 1965, by a combined team composed of members of the Committee for the Conservation of Hearing of the South Dakota Academy of Ophthalmology and Otolaryngology, and the Speech and Hearing Clinic of the University of South Dakota. Featured in the exhibit were the new mobile hearing test laboratory which will soon be starting a statewide program for the evaluation of hearing in school aged children, and a display from the Deafness Research Foundation and Temporal Bone Banks. The latter display was used to acquaint the people of the state with the research projects which are being developed in an effort to explore the subject of hearing loss. Children with hearing losses which are found by the hearing test program will be referred to their family physician.

CORRECTION

The August issue of the Journal carried a listing, on page 43, of the recipients of the Distinguished Service Award. The first recipient of this Award was T. F. Riggs, M.D., of Pierre in 1951.

1965 DONATIONS TO SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT ASSOCIATION

T. A. Angelos, M.D.
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B. J. Begley, M.D.
G. Robert Bell, M.D.
S. M. Brzica, M.D.
B. S. Clark, M.D.
Marion Cosand, M.D.
Magni Davidson, M.D.
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D. L. Ensberg, M.D.
R. J. Foley, M.D.
Dennis L. Epp, M.D.
I. I. Kaufman, M.D.
Jose Villa, M.D.
Dagmar Glood, M.D.
J. B. Gregg, M.D.
Duane Greenfield, M.D.
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Charles B. Gwinn, M.D.
J. H. Hoskins, M.D.
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E. A. Hofer, M.D.
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Joseph Hamm, M.D.
K. Illig, M.D.
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C. F. Johnson, M.D.
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H. O. Kittelson, M.D.
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George Knabe, M.D.
J. F. Leeds, M.D.
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Harold Lowe, M.D.
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E. J. Moore, M.D.
Chris Moller, M.D.
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A. M. Semones, M.D.
C. Rodney Stoltz, M.D.
C. L. Swanson, M.D.
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University of South Dakota Postgraduate Medical Programs

Cellular Response in Health and Disease

November 12, 13, 1965

Sponsored By: The School of Medicine. The Extension Division — of the University of South Dakota, Vermillion

Guest Speaker: Arthur Robinson, M.D., Associate Professor, Department of Biophysics, University of Colorado School of Medicine

Friday, November 12

MORNING SESSION

8:00-8:30	Registration. Medical Science Building
9:00	Introduction and Welcome — Dr. Warren L. Jones
9:15	Ultrastructure of the Cell — Dr. Earl B. Scott
10:00	Intermission
10:15	Chromosomes in Medicine — Dr. Walter L. Hard
11:00	Rhinencephalic Structures in Motivation and Emotion — Dr. Willard O. Read
11:30	Dr. Arthur Robinson
12:30	Buffet Luncheon. University Student Union

AFTERNOON SESSION

1:30	Cytological Basis of Carcinogenesis — Dr. Edwin H. Shaw, Jr.
2:15	Phenylketonuria in Relation to Mental Disease — Dr. Finley D. Marshall, Jr.
3:00	Intermission
3:15	Ceruloplasmin in Wilson's Disease — Dr. Jerry B. Critz
4:00	Some Disorders of Amino Acid Metabolism in Man — Dr. Leonard C. Smith

EVENING

6:30	Social Hour and Dinner — The Prairie, Vermillion
8:00	Dr. Arthur Robinson

Saturday, November 13

MORNING SESSION

8:30	Cellular Basis for Cardiac Glycoside Action — Dr. Joseph D. Welty
9:15	Interferon Production by Virus-Infected Cells — Dr. Charles R. Gaush
10:00	Intermission
10:15	The Dynamics of Phagocytosis — The Interaction Between Group A Streptococci and Human Neutrophils in Vitro — Motion Picture Film. Pfizer Laboratories.
10:45	Bacterial L-Forms: Their Possible Role as a Bacterial Survival Mechanism in the Presence of Host Defensive Factors — Dr. Paul F. Smith
11:30	Concluding Remarks
12:00	Adjournment

(Abstracts of scientific presentations will be printed in the final program. Programs will be mailed to physicians in South Dakota and adjacent regions of nearby states)

NOTE: The course is designed to offer the practising physician increased knowledge of fundamental aspects of medical science which apply to the cause, prevention, diagnosis and treatment of disease.
Registration fee of $10.00 may be paid at the time of the course; however, those planning to attend are requested to return an enclosed pre-registration form. Fee includes luncheon Friday. The dinner and social hour Friday night will be on an individual subscription basis.
AAGP credit approval will be requested.
Sophomore medical students will be invited to attend.

Path C A P sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

THE CLASSIFICATION OF ACID-FAST BACILLI

The isolation and identification of Mycobacterium tuberculosis from clinical material is diagnostic for tuberculosis. The organism is a frank pathogen for man. It is not found in the absence of infection and it is not a part of the normal flora of the body.

Laboratory procedures exist which, when judiciously applied to acid-fast isolates, enable one to firmly identify M. tuberculosis. Some of these procedures are biochemical tests to determine niacin and peroxidase production and neutral red binding. Virulent strains are positive to all of these. Other characteristics such as typical cellular and colonial morphology, cord formation and the production of granulomatous disease in inoculated animals (guinea pigs) aid further in identifying the organism as the virulent human pathogen.

Other types of acid-fast organisms may be isolated from specimens. These may be either harmless saprophytes such as Myco-bacterium smegmatis, the smegma bacillus, or one of the unclassified mycobacteria that formerly were identified as chromogenic or atypical acid-fast bacilli.

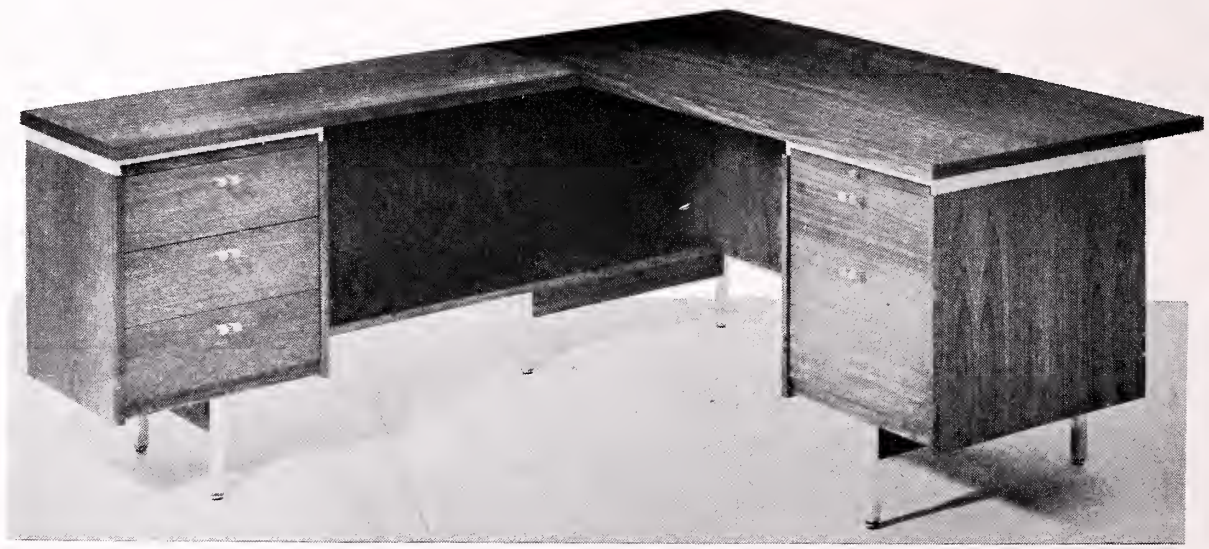
Unclassified Mycobacteria

The unclassified mycobacteria contain some organisms that do cause tuberculosis-like disease. It is estimated that anywhere from 0.5-2.0 per cent of cases diagnosed as tuberculosis harbor forms of unclassified mycobacterium rather than M. tuberculosis.[1]

Forms of the disease caused by these organisms range from acute suppurative lung abscesses and chronic cavitary lung diseases to other disseminated systemic infections similar to miliary tuberculosis.

With the increasing awareness that these forms frequently are pathogenic, several classification schemes have been introduced in an effort to separate the pathogens from the non-pathogens.

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Biochemical tests have not been successful in this separation. With the exception of a few isolates that are pathogenic for guinea pigs or mice, animal pathogenicity tests are of little value. The most frequently used growth characteristics are the production of pigment, the effect that exposure to light has on pigment production and the length of incubation time required to produce visible growth. Using these criteria, Runyon[2] has been able to separate these organisms into four groups. These are presented below:

Group I—Representatives of this group are most closely associated with human pulmonary disease. They are frequently isolated from gastric washings and sputum in the absence of any other pathogen. These organisms are frequently pathogenic for mice and guinea pigs. Many actively growing strains develop a bright yellow color after exposure to bright light. Continuing growth in light deepens the pigmentation to red-orange.

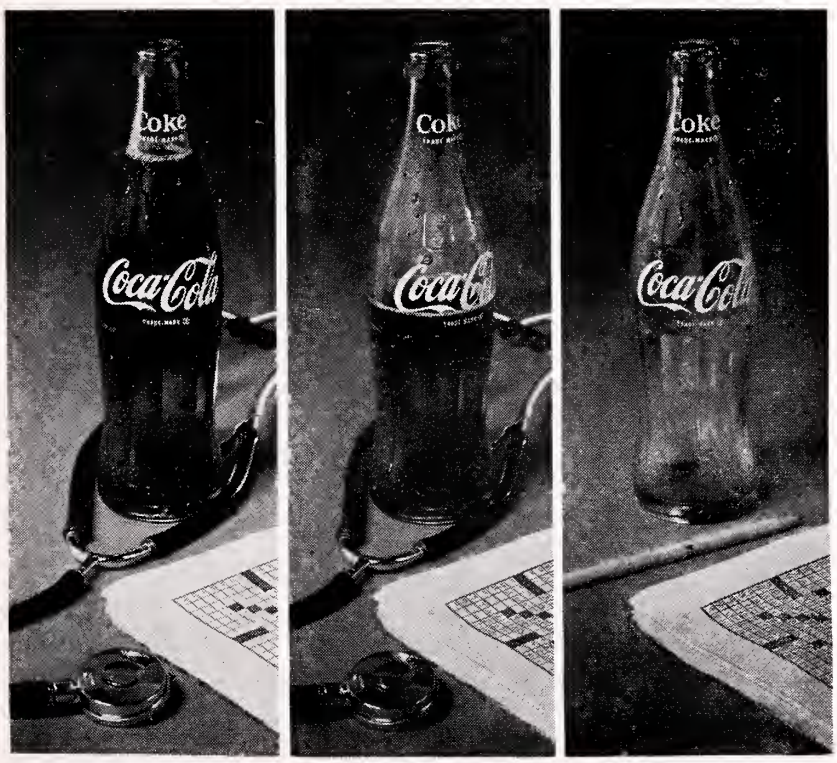
Group II—The members of this group are rarely pathogenic. They may be isolated from clinical material, but not in the absence of other organisms. They have been reported from such areas as contaminated distilled water and other sources and are most likely saprophytic contaminants. The usual pigment is yellow-orange when exposed to light; continued exposure deepens the pigmentation to brick-red.

Group III—These organisms may occasionally be pathogenic for man, although not as frequently as those in Group I. These organisms are usually not pigmented.

Group IV—Although there are a limited number of reports indicating the members of this group were the only organisms isolated from sites of pulmonary disease, their association with clinical specimens is rare. It is most likely they are saprophytes and that their association with disease is coincidental.

While the unclassified mycobacteria present a difficult taxonomic problem, some progress has been made toward providing a basis by which the virulence for man of the individual organism can be indicated. However, it is of paramount importance that the physician be

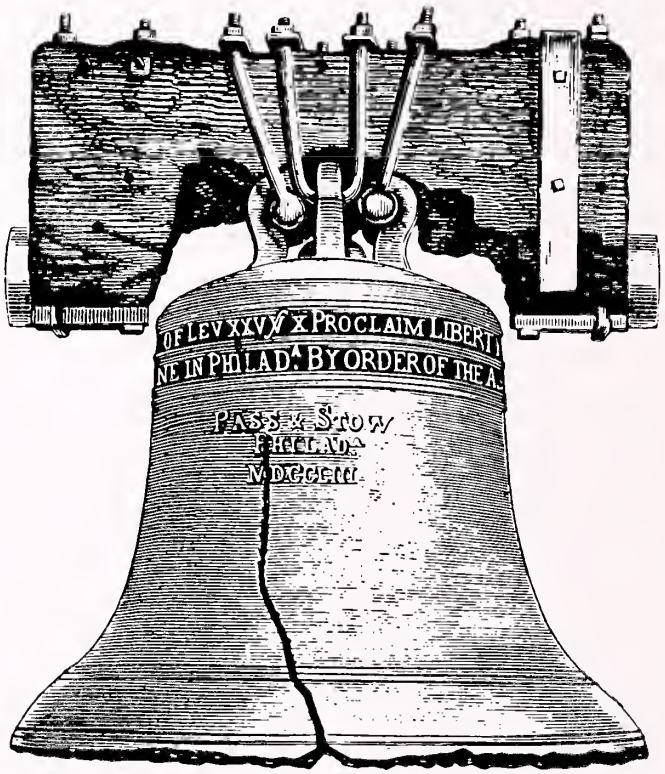
(Continued on Page 39)



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This postgraduate refresher course, conducted by the nation's outstanding medical authorities, will be presented for you in historical Philadelphia. Philadelphia has many luxurious hotels and colorful restaurants. Mail the enclosed registration and room reservations coupons now!

TWO POSTGRADUATE COURSES: Gynecology and Obstetrics; and Cardiovascular Therapeutics (each to be presented in 3 half-day sessions) BREAKFAST ROUND-TABLE DISCUSSIONS: Gynecologic Difficulties in the Adolescent • Early Management of Traffic Accident Patients • Common but Worrisome Pediatric Problems •The Nature of Chronic Bronchitis and Pulmonary Emphysema • Prevention of Long Term Illness: A Practical Approach • Clinical Uses of Electroencephalography SCIENTIFIC SESSIONS: Ulcerative Colitis • Pediatrics • Chemotherapy of Cancer • Preventive Surgery in Cancer • Bacterial Infections • Ultraviolet Irradiation in Medicine • Genetics • Current Status of Drug Therapy in Rheumatology • Psychiatry • Urology • Gastrointestinal Surgery • Cardiovascular Surgery • Current Concepts of Shock • Computers in Medicine • Pain in the Back • Orthopedics • Common Otology Problems • Eye Problems and the Non-Ophthalmologist • CLOSED CIRCUIT COLOR TELEVISION • MOTION PICTURE PREMIERES • Hundreds of SCIENTIFIC AND INDUSTRIAL EXHIBITS

The complete scientific program, plus forms for advance registration and hotel accommodations, will be featured in JAMA October 25

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News Notes • Changes • Births • News

Pop's Proverb

Would you want the treatment you advise to be used on you in similar circumstances?

NEWS NOTES

James DeGeest, M.D., Miller was appointed to the State Public Health Advisory Committee by **Gov. Nils Boe.**

* * *

The American Diabetes Association urges that all of our doctors test every patient for Diabetes - Diabetes Week, November 14-20.

The Fourth Regional Workshop on Mental Health, sponsored by the AAGP was held in Omaha, Nebraska Sept. 18-19. **Dr. Art Reding,** Marion, South Dakota, chairmanned the two day event. Representing South Dakota at the meeting were: **E. T. Lietzke, M.D., E. S. Watson, M.D., R. B. Leander, M.D., W. M. Gysin, M.D., E. R. Spicer, M.D., H. E. Davidson, M.D., Paul Hohm, M.D., Robert Bell, M.D., G. W. Knabe, M.D.,** and **Richard C. Erickson,** executive secretary of the SDSMA.

The Third District Medical Society held their meeting August 10, 1965 at the Madison Country Club. **John B. Gregg, M.D.,** Sioux Falls, presented a movie and talk on "Rx of Hare Lip and Cleft Palate." He also discussed the establishment of a Sioux Falls Clinic to take care of such cases.

* * *

Mrs. Granville Steele and **Mrs. Vogele** were delegates to the New York Meeting. Others attending from district 1 were **Mrs. Bunker** and **Mrs. George McIntosh,** Eureka.

MEDICAL EDUCATION ANNIVERSARY HIGHLIGHTS CLINICAL CONVENTION

The 200th anniversary of medical education in the United States is being observed in Philadelphia as the American Medical Association holds its 19th Clinical Convention there Nov. 28-Dec. 1.

The convention is being held in cooperation with the bicentennial observance of the nation's oldest medical school, the University of Pennsylvania School of Medicine.

Physicians and their families will be able to participate in ceremonies observing the school's founding. They also will have opportunities to visit other parts of historic Philadelphia.

Independence Hall, the Liberty Bell, Betsy Ross' house and the old Custom House are among many important historical sites that make Philadelphia one of America's most interesting cities to visit.

Philadelphia has many luxurious hotels and colorful restaurants. Blocks of rooms in ten major hotels have been reserved for those attending the convention.

For more information on registration, write to Circulation and Records Department, American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

PATH CAPsule—

(Continued from Page 37)

aware of the shortcomings of this classification.

In any given case, the assignment of etiological significance to a member of the unclassified mycobacteria can only be made when the organism is repeatedly isolated from suspected clinical material in the absence of any known pathogenic agent. Furthermore, a thorough evaluation of the patient must disclose no findings that are inconsistent with the diagnosis of tuberculosis caused by the unclassified mycobacteria.

REFERENCES

1. Diagnostic Standards and Classification of Tuberculosis, 1961 National Tuberculosis Association.
2. Tuberculosis Laboratory Methods, 1958, V.A. Dept. of Medicine and Surgery, Central Office, Washington, D. C.

The establishment of an annual award to honor the memory of Norman A. Welch, M.D., president of the American Medical Association when he died last year, was announced today by the National Association of Blue Shield Plans in Chicago.

The Norman A. Welch, M.D. Memorial Award will be presented annually to the author of the most scholarly and meritorious contribution to the literature of medical economics during that year. The work for consideration this year can be an article or series of articles, a book, or a paper published or presented between July 1, 1964 and June 30, 1965.

The award consists of a solid gold medallion emblazoned with the bust of Dr. Welch to be presented to the author and $1,000 contributed in his name to the Norman A. Welch Memorial Fund of the American Medical Association Education and Research Foundation.

* * *

Sioux Falls District Medical Society met on September 7th, in Sioux Falls. 65 members were present for dinner and a business meeting. **Dr. Robert Quinn** presented a review of the Medicare law.

J. J. Stransky, M.D., Watertown, recently attended a three day postgraduate program at the University of Wisconsin Medical Center.

* * *

The American College of Physicians Postgraduate Course No. 6 presents a Review of Advances in Internal Medicine, November 8-12, 1965 in Brooklyn, New York. For detailed information write Edward C. Rosenow, Jr., M.D., Executive Director, The American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

* * *

Mrs. C. L. Vogele, Aberdeen, attended the 42nd Annual Convention of the Woman's Auxiliary to the American Medical Association in New York; as outgoing president she received an Award for her own district 1, which includes Aberdeen. The Award was given in recognition of the money collected in the district for the foundation. **Mrs. Paul Bunker,** Aberdeen, is the district chairman of the AMA-ERF. The amount collected in the district under her chairmanship was $972.65. This was the first time South Dakota has received a national honor at a national AMA Woman's Auxiliary Convention.

I. R. Salladay, M.D., Ft. Meade, has volunteered for 60 days in the project Viet-Nam, to provide medical care for the civilian population in South Viet-Nam.

* * *

The Whetstone Valley District Medical Society met on September 8, 1965 in Milbank. Thirty-two physicians and wives were present for the meeting. **Dr. Paul Hohm,** President of the State Association made his official visitation to the district and discussed the Medicare bill. He was accompanied by Executive Secretary **Richard Erickson** and **Randall Tuffs.**

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Roentgenograms demonstrate that this activity occurs within two hours after oral administration and persists for at least six hours.

Studies in the rat show Lomotil to be more effective in inhibiting fecal excretion than either codeine or morphine.

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Reduction of propulsive motility with Lomotil relieves spasm and cramping, allows physiologic absorption of fluid and reduces frequency of evacuations to provide prompt, symptomatic control of virtually all diarrheas.

LOMOTIL® tablets liquid

Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride ..... 2.5 mg.
(Warning: May be habit forming)

atropine sulfate ..... 0.025 mg.

slows propulsion · relieves distress · stops diarrhea



Precautions: Lomotil is an exempt narcotic preparation of very low addictive potential: more than three million prescriptions have now been written for Lomotil. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia.

Dosage: For full therapeutic effect – Rx full therapeutic dosage. The recommended initial daily dosages, *given in divided doses,* until diarrhea is controlled, are:

Children:
3 to 6 months—3 mg. (½ tsp.* t.i.d.)
6 to 12 months—4 mg. (½ tsp. q.i.d.)
1 to 2 years—5 mg. (½ tsp. 5 times daily)
2 to 5 years—6 mg. (1 tsp. t.i.d.)
5 to 8 years—8 mg. (1 tsp. q.i.d.)
8 to 12 years—10 mg. (1 tsp. 5 times daily)

Adults: 20 mg. (2 tsp. 5 times daily or 2 tablets 4 times daily) **Based on 4 cc. per teaspoonful.*

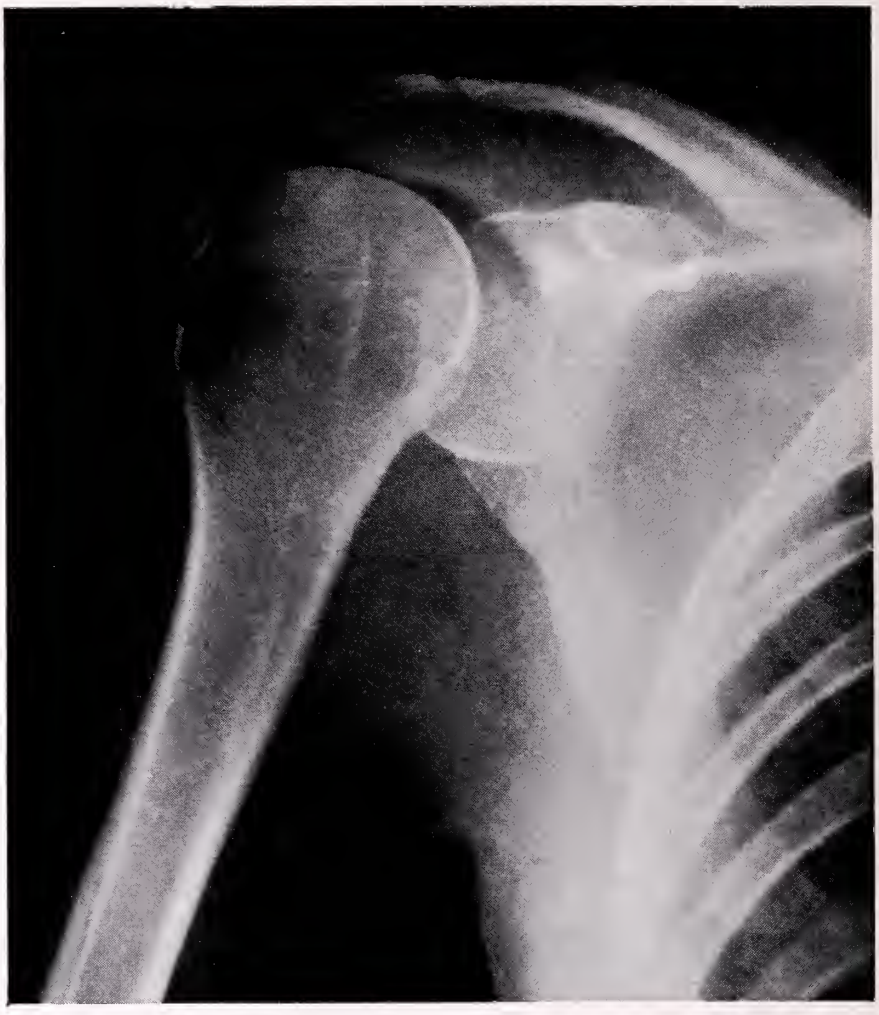
Maintenance dosage may be as low as one fourth the therapeutic dose.

Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdosage.

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brand of phenylbutazone

in painful shoulder



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Therapeutic Effects
The acute phase of subdeltoid bursitis, tendinitis and associated periarticular inflammation usually responds promptly and dramatically to Butazolidin, brand of phenylbutazone. Pain and tenderness may be relieved within 24-48 hours and mobility of the affected arm quickly restored. Full recovery is frequently achieved within 7-10 days so that therapy is generally of short duration. Calcific deposits are not specifically affected by treatment, but their presence does not appear to retard symptomatic improvement.

Phenylbutazone has not replaced physiotherapy, x-ray treatment, or local injections of hydrocortisone in the more chronic conditions, but it may advantageously be combined with these measures.

Contraindications
Edema, danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin alka are contraindicated in patients with glaucoma.

Precautions
Before prescribing, the physician should obtain a detailed history and perform a complete physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning
If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Adverse Reactions
The most common adverse reactions are nausea, edema and drug rash. The drug may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

Average Dosage
Initially, give 400 mg. daily (one tablet or capsule q.i.d.), reducing this, if possible, when a favorable therapeutic effect has been obtained. If after one week there has been no response, discontinue the drug. To minimize gastric distress, Butazolidin alka capsules may be the preferred form.

Note: The physician should be fully aware of dosage, precautions, adverse reactions, and contraindications as contained in the complete prescribing information.

Butazolidin alka

Each capsule contains:	
Butazolidin, brand of phenylbutazone	100 mg.
dried aluminum hydroxide gel	100 mg.
magnesium trisilicate	150 mg.
homatropine methylbromide	1.25 mg.

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Documented record of clinical safety

References: 1. Goldsmith, J. W.: Minn. Med. (Feb.) 1957. 2. Groskloss, H. H., Clancy, C. L., Healey, E. F., McCann, W. J., Maloney, F. D., Loritz, A. F.: Clinical Medicine (Sept.) 1955. 3. Codling, J. W., Lowden, R. J.: Northwest Med. (March) 1958. 4. Bethea, R. C.: International Record of Med. (May) 1960. 5. Lenz, W., Second International Conference on Congenital Malformations, N. Y., N. Y., (July) 1963.

Side effects: the incidence of drowsiness and other atropine-like effects is low. However, caution patients engaged in activities where alertness is mandatory.



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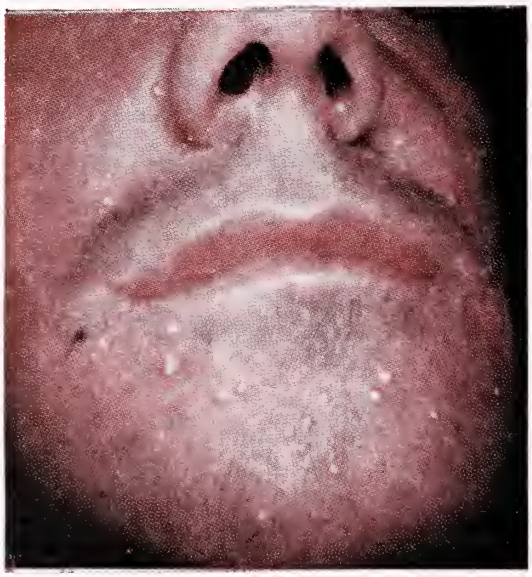
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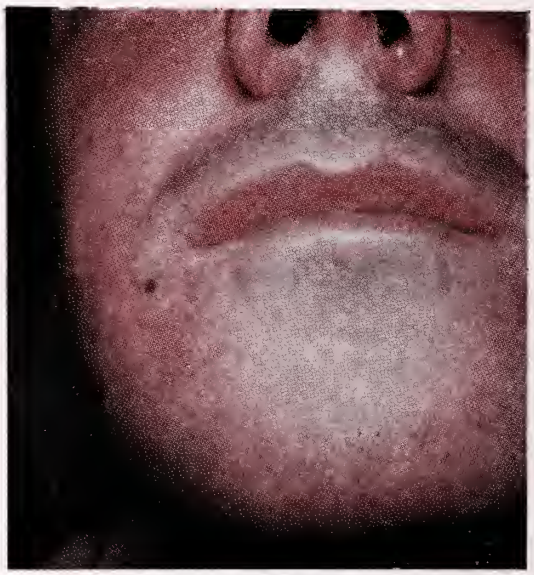
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Each gram contains:

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Tubes of ½ oz. and 1 oz.

- clinically effective
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- rarely sensitizes

For the eradication of infectious organisms in a wide range of dermatologic disorders: impetigo, ecthyma, pyodermas, sycosis vulgaris, paronychia, traumatic lesions, eczema, herpes and seborrheic dermatitis. Prophylactically, for protection against bacterial contamination in burns, skin grafts, incisions and other clean lesions, abrasions and minor cuts and wounds.

Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs.

Contraindication: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

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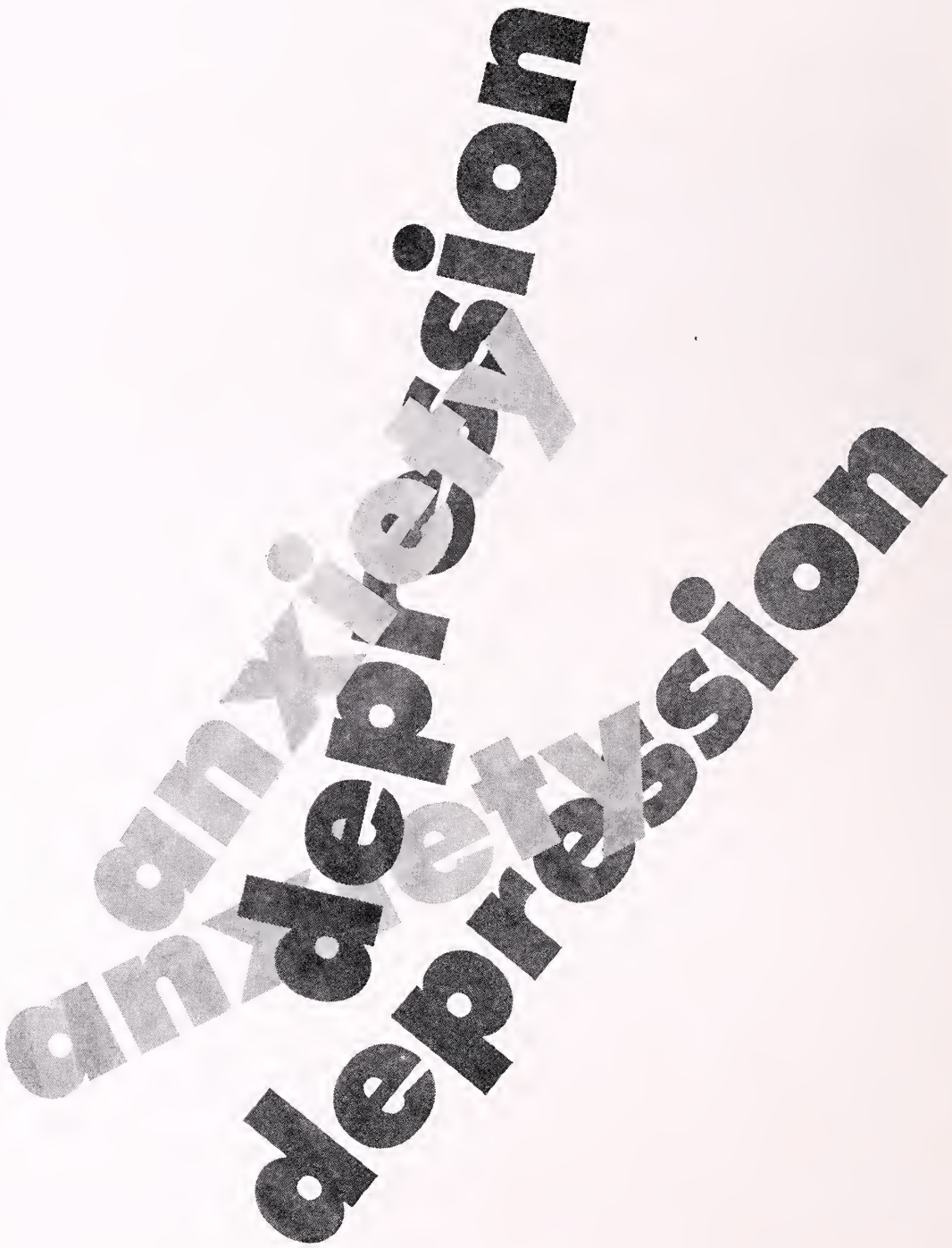
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"...it is extremely difficult and sometimes impossible to differentiate between 'pure depression' and anxiety and it is questionable whether depression without a certain degree of anxiety really exists."

Lehmann, H. E., Canad. Psychiat. Assn. J. *4(S)*: 1-12, 1959



An antidepressant designed for the clinical realities of office practice

As many physicians have reported, the large majority of neurotic depressed patients suffer from both depression and anxiety. It may be difficult to decide whether these patients are primarily depressed or primarily anxious. And yet drug treatment of only the symptom which seems more prominent may exacerbate the untreated element of the depression complex.

Consequently, it would seem that therapy specifically aimed at both the depression and associated anxiety and tension should increase success in treatment.

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Contraindications: Benactyzine hydrochloride is contraindicated in glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

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Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

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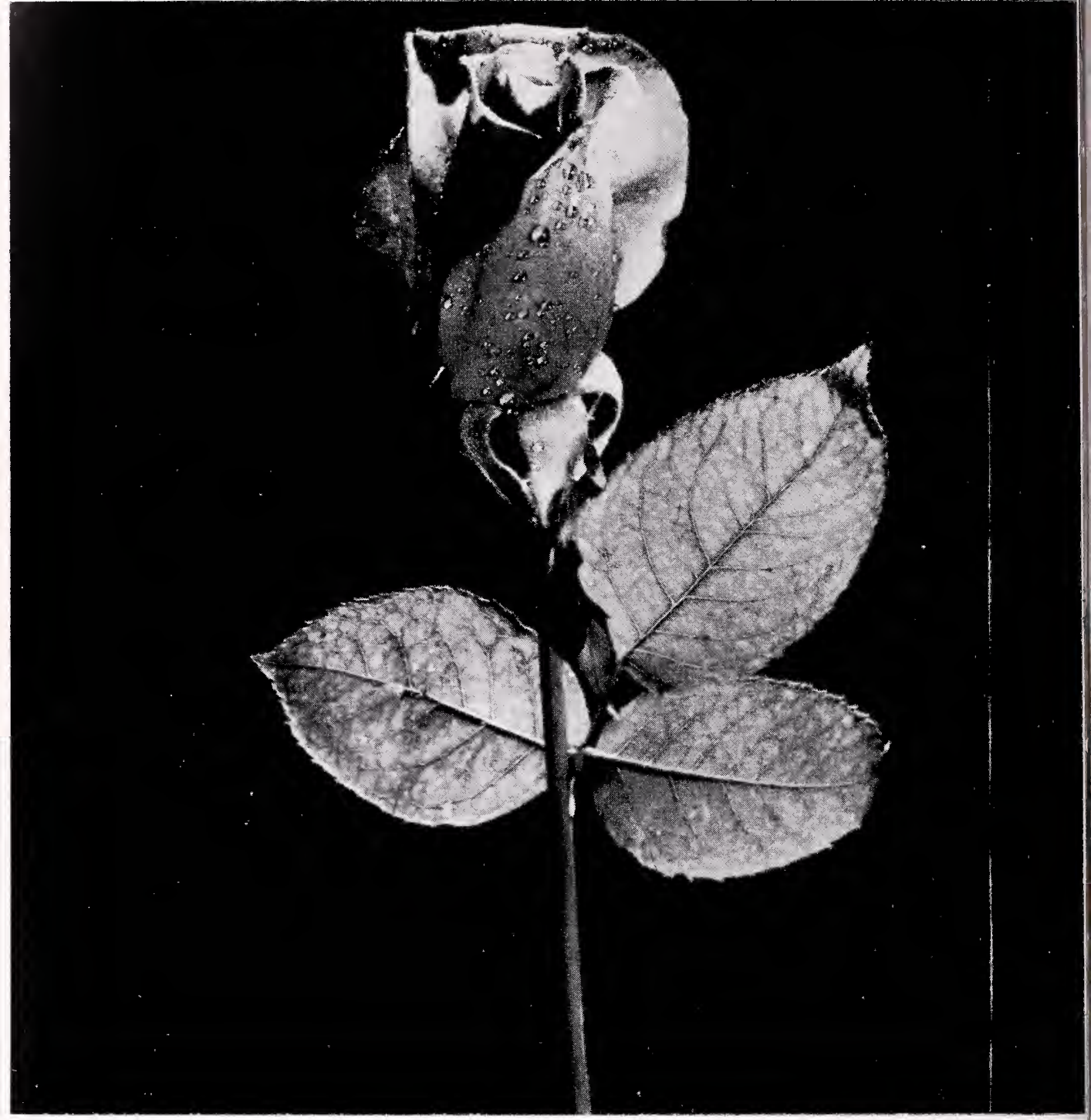
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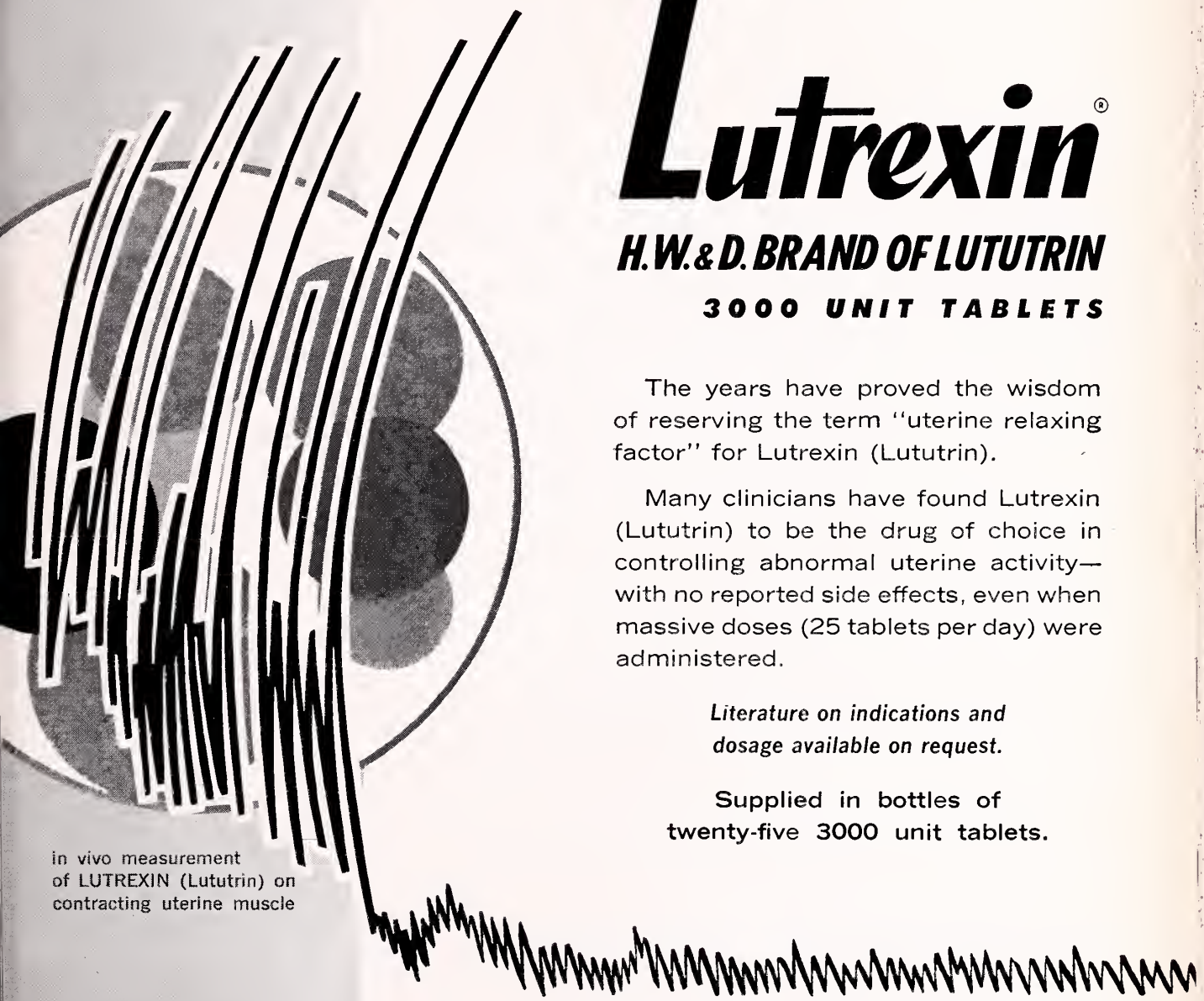
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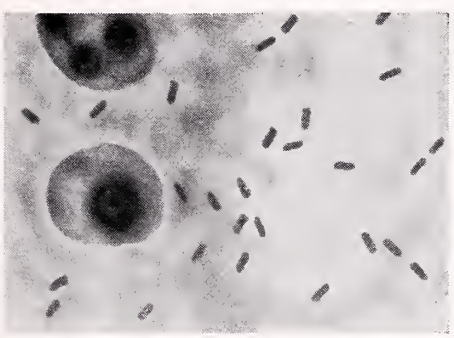
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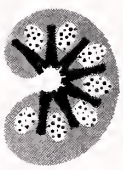
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References: (1) Carroll, G.: Urologists' Letter Club, June 1, 1964. (2) McDonald, D. F., and Short, H. B.: Address to the Fourth Interscience Conference on Antimicrobial Agents and Chemotherapy, New York, Oct. 26-28, 1964.

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An eminent role in medical practice

- Clinicians throughout the world consider meprobamate a therapeutic standard in the management of anxiety and tension.
- The high safety-efficacy ratio of 'Miltown' has been demonstrated by more than a decade of clinical use.

Miltown® (meprobamate)

Indications: 'Miltown' (meprobamate) is effective in relief of anxiety and tension states. Also as adjunctive therapy when anxiety may be a causative or otherwise disturbing factor. Although not a hypnotic, 'Miltown' fosters normal sleep through both its anti-anxiety and muscle-relaxant properties.

Contraindications: Previous allergic or idiosyncratic reactions to meprobamate or meprobamate-containing drugs.

Precautions: Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Usual adult dosage: One or two 400 mg. tablets three times daily. Doses above 2400 mg. daily are not recommended.

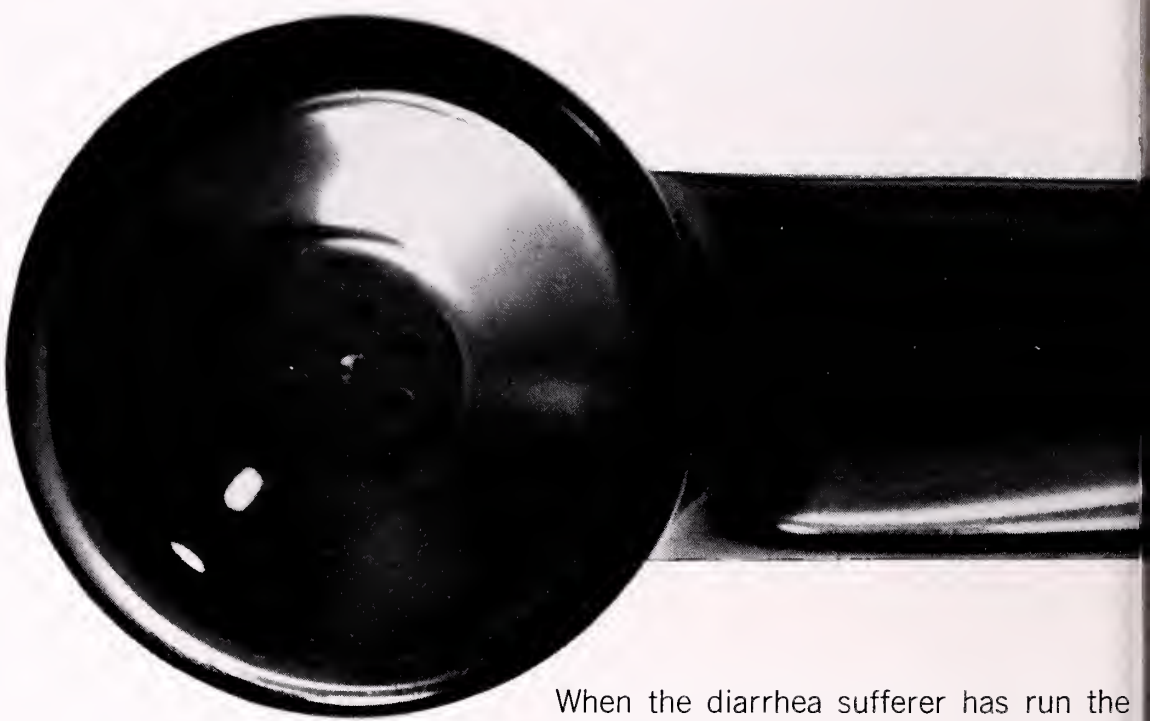
Supplied: In two strengths: 400 mg. scored tablets and 200 mg. coated tablets.

Before prescribing, consult package circular.

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CM-5761

When uncontrolled diarrhea brings a call for help



When the diarrhea sufferer has run the gamut of home remedies without success, pleasant-tasting CREMOMYCIN can answer the call for help. It can be counted on to consolidate fluid stools, soothe intestinal inflammation, inhibit enteric pathogens, and detoxify putrefactive materials—usually within a few hours.

CREMOMYCIN combines the bacteriostatic agents, succinylsulfathiazole and neomycin, with the adsorbent and protective demulcents, kaolin and pectin, for comprehensive control of diarrhea.

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your ℞ for Cremomycin can provide relief



min K. Neomycin: Patient should be observed for new infections due to bacteria or fungi. *Side Effects:* Sulfonamide: Sensitivity reactions may occur (e.g., skin rashes, anemia, polyneuritis, fever; agranulocytosis with a fatal outcome has been reported). Reduction of thiamine output in the feces and of vitamin K synthesis has been observed. Neomycin: Nausea, loose stools possible.

Before prescribing or administering, read product circular with package or available on request.

promptly relieves diarrheal distress

Cremomycin®

ANTIDIARRHEAL

Composition: Each 30 cc. contains neomycin sulfate 300 mg. (equivalent to 210 mg. of neomycin base), succinylsulfathiazole 3.0 Gm., colloidal kaolin 3.0 Gm., pectin 0.27 Gm.

MSD **MERCK SHARP & DOHME** Division of Merck & Co., Inc., West Point, Pa.

where today's theory is tomorrow's therapy

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especially in diabetics or debilitated patients

and in patients with a history of fungal overgrowth—during pregnancy—patients on steroids who require antibiotics—the elderly. The antimonilial specificity of Nystatin plus the extra benefits of DECLOMYCIN Demethylchlortetracycline allow lower mg intake per dose per day, the option of b.i.d. dosage, higher activity levels, 1-2 days' "extra" activity.

Side Effects typical of tetracyclines include glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis, dermatitis, overgrowth of nonsusceptible organisms, tooth discoloration (if given during tooth formation) and increased intracranial pressure (in young infants). Also, very rarely, anaphylactoid reaction. Reduce dosage in impaired renal function. Because of reactions to artificial or natural sunlight (even from short exposure and at low dosage), patient should be warned to avoid direct exposure. Stop drug immediately at the first sign of adverse reaction. It should not be taken with high calcium drugs or food; and should not be taken less than one hour before, or two hours after meals.

Average Adult Daily Dosage: four divided doses of 1 capsule each or two divided doses of 2 capsules.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

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DECLOSTATIN®

DECLOMYCIN* Demethylchlortetracycline HCl 150 mg and Nystatin 250,000 units/CAPSULES LEDERLE

with the option of b.i.d. dosage



Butazolidin® alka

Each capsule contains:

Butazolidin, brand of phenylbutazone	100 mg.
dried aluminum, hydroxide gel	100 mg.
magnesium trisilicate	150 mg.
homatropine methylbromide	1.25 mg.

in painful shoulder



Geigy

Therapeutic Effects
The acute phase of subdeltoid bursitis, tendinitis and associated periarticular inflammation usually responds promptly and dramatically to phenylbutazone. Pain and tenderness may be relieved within 24-48 hours and mobility of the affected arm quickly restored. Full recovery is frequently achieved within 7-10 days so that therapy is generally of short duration. Calcific deposits are not specifically affected by treatment, but their presence does not appear to retard symptomatic improvement.

Phenylbutazone has not replaced physiotherapy, x-ray treatment, or local injections of hydrocortisone in the more chronic conditions, but it may advantageously be combined with these measures.

Contraindications
Edema, danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin alka are contraindicated in patients with glaucoma.

Precautions
Before prescribing, the physician should obtain a detailed history and perform a complete physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning
If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Adverse Reactions
The most common adverse reactions are nausea, edema and drug rash. The drug may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

Average Dosage
Initially, give 400 mg. daily (one capsule q.i.d), reducing this, if possible, when a favorable therapeutic effect has been obtained. If after one week there has been no response, discontinue the drug. Butazolidin alka contains antacids and an antispasmodic to minimize gastric upset.

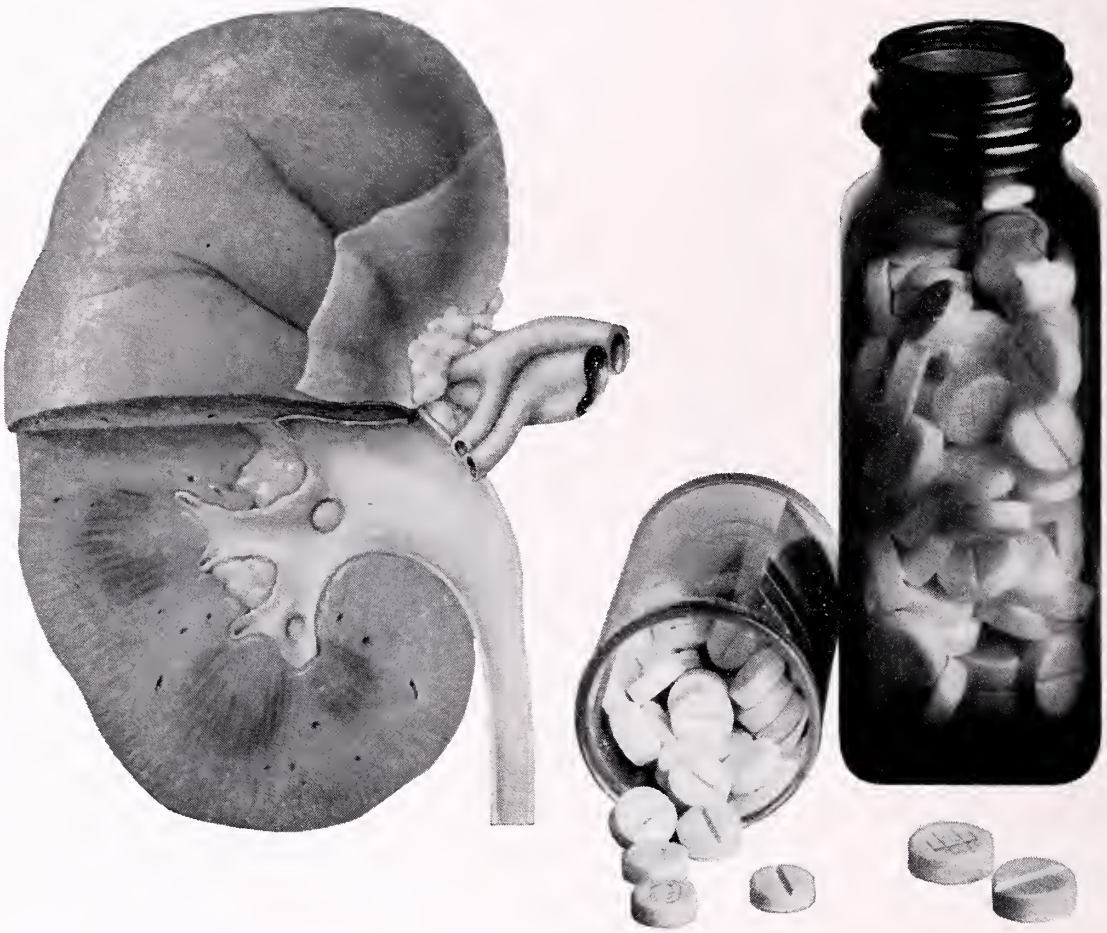
Note: The physician should be fully aware of dosage, precautions, adverse reactions, and contraindications as contained in the complete prescribing information.

Also available:
Butazolidin®
brand of phenylbutazone
Tablets of 100 mg.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

4010P

at Merck Sharp & Dohme...



understanding... precedes development

The development of chlorothiazide and probenecid were events of major importance, but perhaps even more important for the future was the Renal Research Program by which they were developed. When Merck Sharp & Dohme organized this program in 1943, it was expressing in action some of its basic beliefs about research:

• Many problems connected with renal structure and function were still undefined or unsolved. The Renal Research Program would begin its basic research in some of these problem areas.

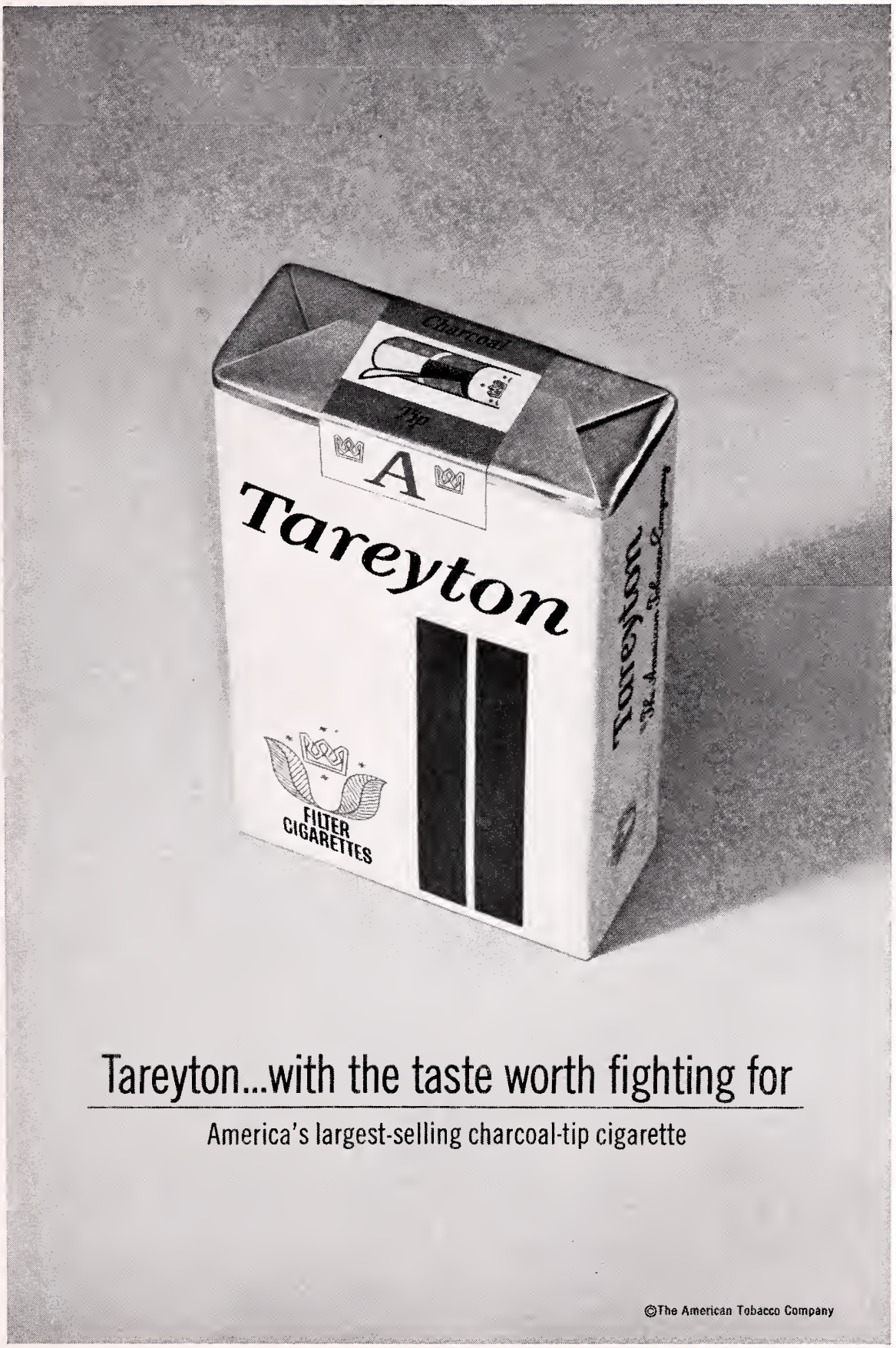
• From knowledge thus acquired might come clues to the development of new therapeutic agents of significant value to the physician.

For example, the Renal Research Program put fifteen years into this search before chlorothiazide became available. But because these years had first led to a greater understanding of basic problems, the desired criteria for chlorothiazide existed before the drug was developed.

Along with other research teams at Merck Sharp & Dohme, the Renal Research Program continues to add new understanding of basic problems—understanding which will lead to important new therapeutic agents.

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where today's theory is tomorrow's therapy



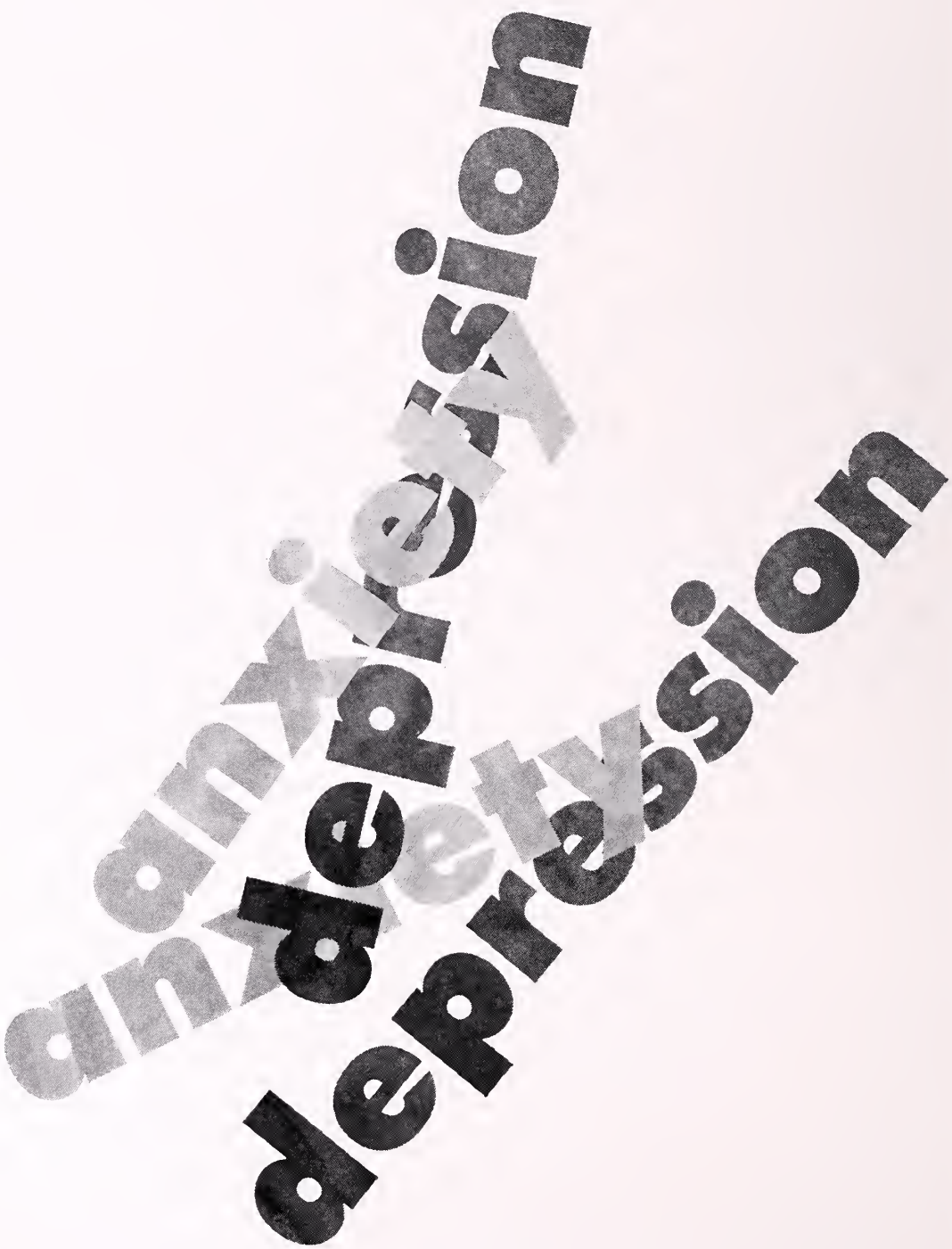
Tareyton...with the taste worth fighting for

America's largest-selling charcoal-tip cigarette

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"...it is extremely difficult and sometimes impossible to differentiate between 'pure depression' and anxiety and it is questionable whether depression without a certain degree of anxiety really exists."

Lehmann, H. E., Canad. Psychiat. Assn. J. *4(S)*: 1-12, 1959



An antidepressant designed for the clinical realities of office practice

As many physicians have reported, the large majority of neurotic depressed patients suffer from both depression and anxiety. It may be difficult to decide whether these patients are primarily depressed or primarily anxious. And yet drug treatment of only the symptom which seems more prominent may exacerbate the untreated element of the depression complex.

Consequently, it would seem that therapy specifically aimed at both the depression and associated anxiety and tension should increase success in treatment.

This is one of the important reasons why 'Deprol' has proved particularly helpful. For 'Deprol' acts rapidly both to lift the mood and to relieve the associated anxiety, tension and insomnia.

And side effects, at recommended dosage, have been infrequent and generally readily controlled.

Indications: 'Deprol' is useful in the management of depression, both acute (reactive) and chronic. It is particularly useful in the less severe depressions and where the depression is accompanied by anxiety, insomnia, agitation, or rumination. It is also useful for management of depression and associated anxiety accompanying or related to organic illnesses.

Contraindications: Benactyzine hydrochloride is contraindicated in glaucoma. Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of pre-existing symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

Benactyzine hydrochloride—Benactyzine hydrochloride, particularly in high dosage, may produce dizziness, thought-blocking, a sense of depersonalization, aggravation of anxiety or disturbance of sleep patterns, and a subjective feeling of muscle relaxation, as well as anticholinergic effects such as blurred vision, dryness of mouth, or failure of visual accommodation. Other reported side effects have included gastric distress, allergic response, ataxia, and euphoria.

Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

Supplied: Light-pink, scored tablets, each containing meprobamate 400 mg. and benactyzine hydrochloride 1 mg.

Before prescribing, consult package circular. CD-5749

Deprol®

meprobamate 400 mg. + benactyzine hydrochloride 1 mg.

WALLACE LABORATORIES / Cranbury, N.J.



FOR YOUR ELDERLY ARTHRITIC PATIENTS...

an effective
GERIATRIC
antiarthritic
with
REASSURING SAFETY FACTORS

Effectiveness, dependability and reassuring Safety Factors make PABALATE-SF a logical choice for antiarthritic therapy in elderly patients—even when osteoporosis, hypertension, edema, peptic ulcer, cardiac damage, latent chronic infection and other common geriatric conditions are present. The potassium salts of PABALATE-SF cannot contribute to sodium retention... the enteric coating assures gastric tolerance... and clinical experience shows that this preparation does not precipitate the serious reactions often associated with corticosteroids or pyrazolone derivatives.

Side Effects: Occasionally, mild salicylism may occur, but it responds readily to adjustment of dosage. Precaution: In the presence of severe renal impairment, care should be taken to avoid accumulation of salicylate and PABA. Contraindicated: An hypersensitivity to any component.

Also available: PABALATE—when sodium salts are permissible. PABALATE-HC—Pabalate-SF with hydrocortisone.

Pabalate-SF

In each persian-rose enteric-coated tablet: potassium salicylate 0.3 Gm., potassium aminobenzoate 0.3 Gm., ascorbic acid 50.0 mg.

—the new, convenient way to prescribe
PABALATE-SODIUM FREE

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA



"All Registered Nurses are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests: they all have to measure up to the same standards. Therefore, all registered nurses are alike.

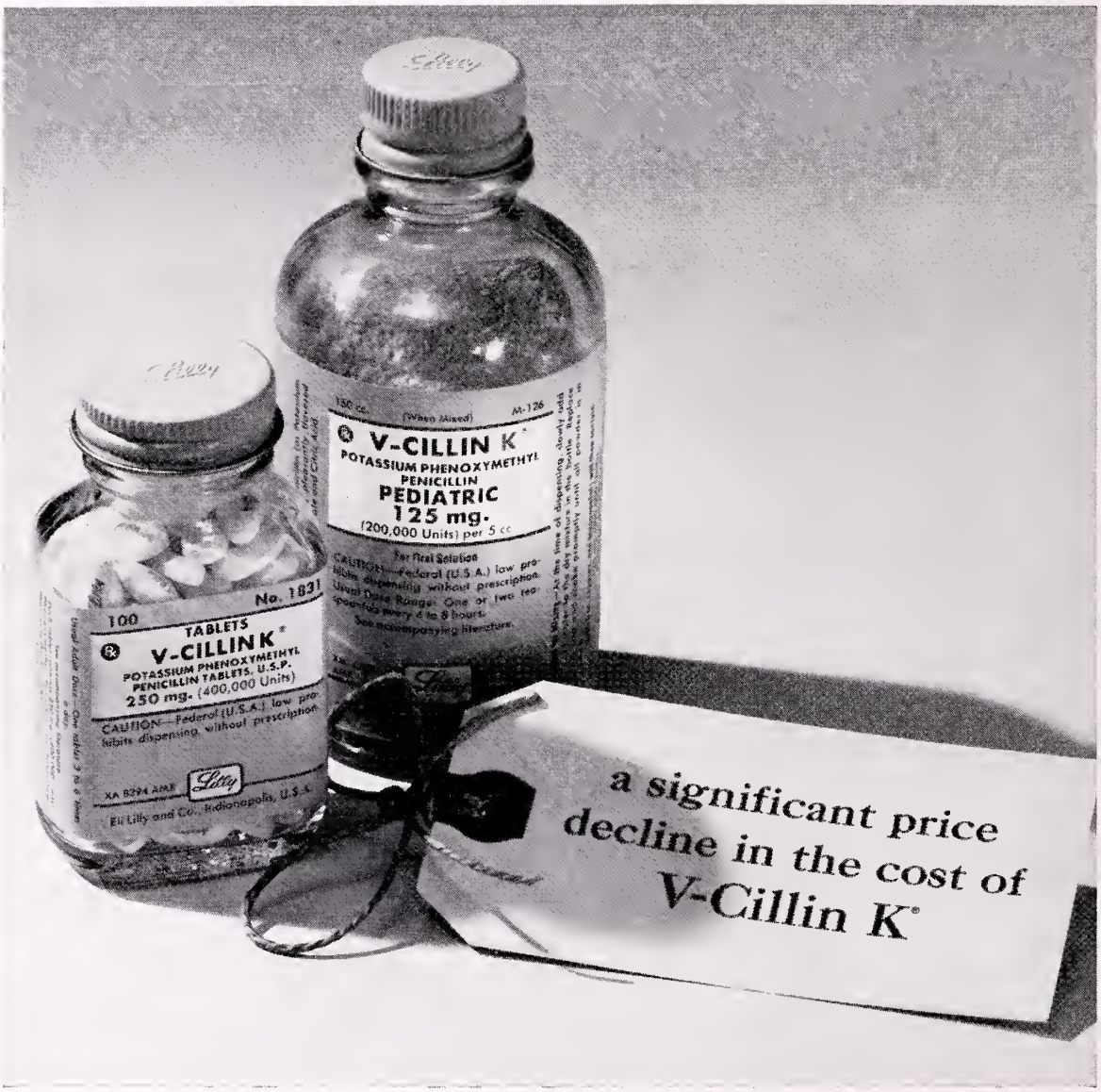
That's nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

Bayer's standards are far more demanding. In fact, there are at least *nine specific differences* involving purity, potency and speed of tablet disintegration. These Bayer® standards result in significant product benefits including gentleness to the stomach, and product stability that enables Bayer tablets to *stay* strong and gentle until they are taken.

So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all registered nurses aren't alike, either.





V-Cillin K now costs approximately 21 percent less. This significant price decline constitutes a substantial saving and still offers these important benefits over penicillin G:

The effectiveness of intramuscular penicillin. Just three 250-mg. doses daily provide total twenty-four-hour penicillin blood levels equal to those achieved by injection of 600,000 units of procaine penicillin G. A fourth dose increases daily penicillemia to levels 35 percent above those achieved by injection.

Consistent dependability—even in the presence of food. Comparative pharmacologic data show that V-Cillin K produces peak blood levels *twice* as high as those of penicillin G, with *half* the dose.

New, thin coating . . . new size and shape. The new coating eliminates the characteristically bitter taste of oral penicillin and makes V-Cillin K tablets easy to swallow. The new shape makes them easy for physicians and pharmacists to identify.

Indications: V-Cillin K is an antibiotic useful in the treatment of streptococcus, pneumococcus, and gonococcus infections and infections caused by sensitive strains of staphylococci.

Contraindications and Precautions: Although sensitivity reactions are much less common after oral than after parenteral administration, V-Cillin K should not be administered to patients with a history of allergy to penicillin. As with any antibiotic, observation for overgrowth of nonsusceptible organisms during treatment is important.

Usual Dosage Range: 125 mg. (200,000 units) three times a day to 250 mg. every four hours.

Supplied: Tablets V-Cillin K, 125 or 250 mg., and V-Cillin K, Pediatric, 125 mg. per 5-cc. teaspoonful, in 40, 80, and 150-cc.-size packages.

V-Cillin K®

Potassium Phenoxymethyl Penicillin

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana.

Lilly

500990

ACOUSTIC NEUROMA*

Diagnosis and Treatment

WOODROW D. SCHLOSSER, M.D.
Philadelphia, Pa.

Symptoms of unilateral sensorineural deafness, tinnitus, and balance problems indicate a need for diagnostic studies for possible acoustic neuroma. Early diagnosis can reduce postsurgical mortality and morbidity associated with large or advanced tumors.

Identification of an acoustic neuroma in advanced cases showing clearly evident neurologic signs and symptoms is not difficult. The identification of an early or small acoustic neuroma, however, continues to be a difficult diagnostic problem. As evidence of this, otologists frequently examine patients with a unilateral sensorineural deafness who have been treated by conservative means for many years before the diagnosis of eighth nerve tumor is made. Therefore, otologists are constantly attempting to improve diagnostic procedures so that an earlier diagnosis of this condition can be made. They should be suspicious and seek to make the earliest possible diagnosis so that the mortality and morbidity resulting from surgical removal can be reduced to a minimum.

Approximately 7 percent of all intracranial tumors are acoustic neuromas. These tumors range from small, involving only the eighth nerve in the early stages of development, to large masses that involve the cerebellopontile angle and other cranial nerve functions. A tumor about 1 cm. in diameter can cause a unilateral sensorineural hearing impairment which has been present from one to nine years. Thus, the duration of the hearing loss is not a precise indication of tumor size.

Therefore, the otologist's suspicions should be aroused immediately by any unilateral sensorineural hearing impairment. The presenting symptoms vary from patient to patient. Tinnitus may or may not have preceded the hearing loss. Dizziness or a sensation of imbalance may also be the primary presenting symptom. Thus, there is the possibility of various combinations of these three primary symptoms when the patient is first seen. There apparently is no predictable time sequence in the symptomatology which eventually involves a unilateral hearing loss, tinnitus, and dizziness or other balance problems.

The ear, nose, and throat findings in these cases are most often unremarkable. Unilateral sensorineural hearing loss with a disproportionate reduction in speech discrimination is the most common symptom of an early acoustic neuroma. Further audiologic testing generally reveals the absence of loudness recruitment and a low Sisi test score, although signs of end organ involvement may be present in a small portion of acoustic neuroma cases. The Bekesy audiometer test demonstrates obvious tone decay for a continuous tone, that is, a type 3 or type 4 pattern. Parenthetically, a Bekesy audiometer is not essential to the demonstration of tone decay. The tone decay test as described by Carhart or modified by Rosenberg[6] can be done with a single channel audiometer and a stopwatch, and with adequate masking of the contralateral ear. Essentially, this test involves a determination of the extent of tone decay for a continuously applied pure tone at a given frequency. Downward threshold shifts in excess of 30 db should make the examiner suspicious of a retrocochlear auditory deficit.

In all cases showing a unilateral sensorineural deficit without strong evidence for an end organ lesion, caloric tests should be performed. In cases of early acoustic neuroma, the results for the deafened ear will generally show an extremely reduced or absent nystagmus. If any one of the otologic or audiologic test procedures be positive for acoustic neuroma, the patient should be hospitalized for further and more extensive investigation than is possible in the office.

Hospital studies should routinely consist of radiographic views of the temporal bone in various projections. Of particular value is the Stenvers view which permits visualization of internal auditory meatuses. Should these pictures be nonrevealing, tomograms of the internal auditory meatus may be an aid in diagnosis because with increased size of the acoustic tumor there is a widening and erosion of the internal auditory canals. A spinal tap may also be of value in revealing the presence of a space-

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* Presented before the Texas Otolaryngological Association during the Texas Medical Association Annual Session in Houston in April, 1964.
Reprinted from Texas Medicine, Vol. 61, Page 197, March, 1965.

occupying body by demonstrating an elevation of protein levels. If suspicions are further aroused by the diagnostic procedures, a partial air encephalogram is another means of visualizing the cerebellopontile angle to detect the presence of a space-taking lesion. This is a neuro-surgical procedure involving partial replacement of the cerebral spinal fluid with air. Through proper positioning of the patient, the air can be made to deposit itself in the angle to produce higher contrast on the film in and around the angle.

The preceding discussion makes it obvious that the early diagnosis of an acoustic neuroma falls within the realm of otology. This is especially true since the earliest manifestations of these tumors are most freqently referable to the auditory or staticokinetic systems alone. Thus, any patient with a unilateral sensorineural hearing loss of the type previously described, even without tinnitus or dizziness, should have the benefit of the diagnostic procedures outlined in order to demonstrate or rule out an acoustic tumor.

It is not uncommon for the neurosurgical and x-ray studies to be negative the first time they are performed. It may be necessary for some patients to undergo this battery of tests several times if otologic symptoms persist. With time, the tumor may enlarge until the fifth cranial nerve is involved. This is manifested by a peculiar or tickling sensation on the side of the face down to the corner of the mouth. Some patients also describe a numbness of the side of the tongue. At times there will be paresthesia of the circumauricular area. Demonstration of corneal anesthesia is also of significance and spontaneous nystagmus to the side of the tumor often is seen, even with a small mass. Seventh nerve involvement is extremely rare. It is amazing how large a tumor can become with stretching of the seventh nerve without obvious facial weakness or paralysis.

CASE REPORTS

Case 1. — Fig. 1 shows the audiogram for a patient who had complained of a hearing loss for at least five years. The tinnitus which she described was a clicking sound and had been present only for the previous year. She did not have any rotational vertigo, but did experience a loss of balance from time to time. There was also occasional shooting pain in the right side of her face which, when frequent, was extremely annoying. The audiologic tests revealed a unilateral sensorineural loss with complete absence of the speech discrimination function. A fixed frequency Bekesy test resulted in a typical type 3 audiogram with extensive tone decay. On the basis of these findings, the patient was hospitalized for neurosurgical studies. X-rays of the temporal bone showed no bony erosion of the internal auditory meatus. Spinal fluid proteins were only slightly elevated. Air studies were performed and revealed no space-occupying lesion. All studies were negative except the audiologic tests.

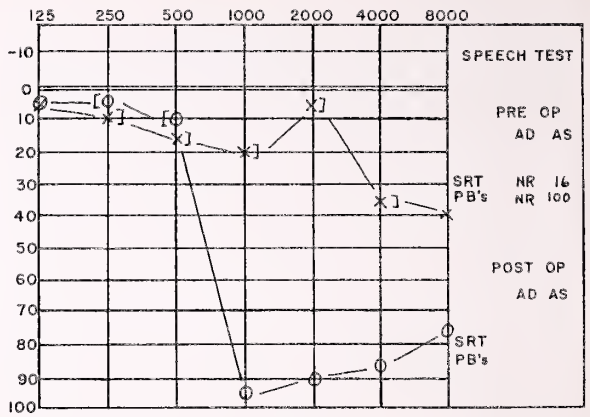


Fig. 1.

I still suspected that a retrocochlear lesion would be found, but the neurosurgeons could not confirm this diagnosis. They therefore recommended that the patient return in several months for a repetition of the neurosurgical studies. In the interim, the audiologic test results remained the same. The patient continued to complain of occasional tinnitus and loss of balance with increased pain over the right ear. At times, there was also a severe and sharp pain in her head.

The patient was readmitted to the hospital and this time her spinal tap showed an extreme elevation of the protein constituents. X-rays again in the Stenvers projection showed no dilatation of the internal auditory canal. However, tomograms taken from the Stenvers position did show in one projection abnormal dilatation of the internal auditory meatus. The minimal air study again showed no space-taking lesion. Because of the dilatation of the internal auditory canal, a postoccipital craniotomy was performed and a large acoustic tumor was removed.

This case illustrates the difficulties in making a definitive diagnosis of acoustic neuroma by x-rays and air studies in spite of positive audiologic findings. The tomogram in the Stenvers projection in a single plane finally showed the erosion of the internal auditory canal.

Case 2. — This patient also had a unilateral sensorineural deafness with reduction in speech discrimination. She first became aware of a hearing loss one year previously. The hearing impairment was discovered suddenly while she was using the telephone. There was no indication of hearing loss prior to this time; however, she had been annoyed by an intermittent ringing tinnitus for seven years, and by dizziness (aggravated by turning or moving about) for the same period of time. After changing position, there was a

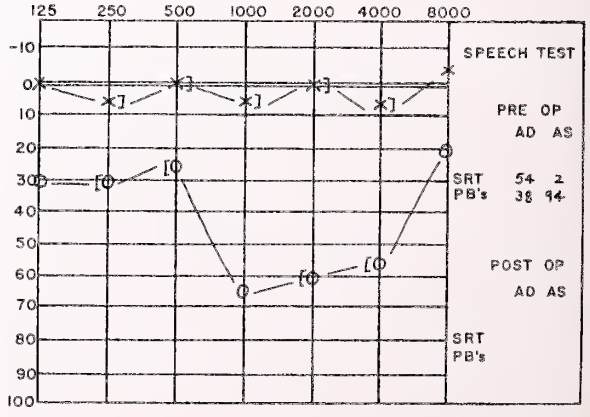


Fig. 2.

short period of rotational vertigo in addition to the tinnitus. She also noted some imbalance when going up or down steps.

A Bekesy audiogram showed a typical type 3 pattern and the caloric test showed a diminished response in the involved ear. There was no corneal anesthesia. The patient was admitted for further study. On x-ray studies, the internal auditory meatuses were well visualized and within normal limits. However, the partial air encephalogram demonstrated a space-occupying lesion. A postoccipital craniotomy was performed, and a moderately sized acoustic neuroma was found and removed. Fortunately, the seventh nerve could be spared and there was a remarkable postsurgical recovery.

Case 3. — During October, 1961, the patient had a virus infection and was ill for about a week with fever, fatigue, and generalized aching. About one week later, she began to develop a throbbing pain in her head. These symptoms continued and, as a result, the patient had skull x-rays which were described as negative. She had experienced no earache until four weeks prior to my examination. Then, she began to feel a pain in the back of her ears and a sensation of fullness. The only thing that relieved the symptoms was heat. At no time did the patient complain of tinnitus or vertigo. However, because of this otalgia of undetermined etiology, the patient was hospitalized for more extensive study. X-rays of the skull were repeated and again were within normal limits. However, tomograms of the internal auditory meatus in the Stenvers view clearly demonstrated erosion of the external auditory canal.

On January 26, 1963, using the lateral temporal approach and the assistance of a neurosurgeon, an acoustic neuroma was found and removed. In this case, we did not have any definitive otologic symptoms typical of an eighth nerve tumor, yet we found a moderately sized tumor. This patient complained more of cephalalgia than anything else. Hospitalization for further studies was essential to the diagnosis. This case, of course, is unusual and certainly is not typical of most acoustic neuroma cases.

Treatment

The posterior fossa approach is the most common surgical technique for acoustic neuroma, and the one primarily used by the neurosurgeon. It has been used for many years. However, the translabyrinthine approach for small tumors was used by Panse[5] and Zange[8] many years ago. Because this approach was tried before the operating microscope offered good visualization and high illumination, the procedure was abandoned. Cushing[2] has reported that Quix in 1911 removed a small tumor via the translabyrinthine approach. However, Cushing goes on to say:

> It is, however, within the realm of possibility that in the case of a very early and minute tumor largely limited to the internal canal the translabyrinthine operation may in time become the operation of choice, but this will necessitate far more precocious and more exact diagnoses than we as yet are capable of.

House at first used the lateral temporal approach and more recently has been using the translabyrinthine technique. I do not feel, however, that this is necessarily the best approach for a large tumor, and I advocate a combined approach for these cases. The rationale for the translabyrinthine approach is the preservation of the seventh nerve. However, should the seventh nerve be damaged, the work of Dott[3] in grafting a nerve 1 cm. or more beyond its exit from the pons is noteworthy. This procedure is a most tedious one and I believe that every effort should be made to spare the seventh nerve. Patients with moderately sized tumors removed through one of these techniques can and do maintain good function of the seventh nerve. Damage to the seventh nerve adds horrors to the postoperative effect on the patient and avoidance of this complication is worth the time and energy spent in preserving intact nerve function.

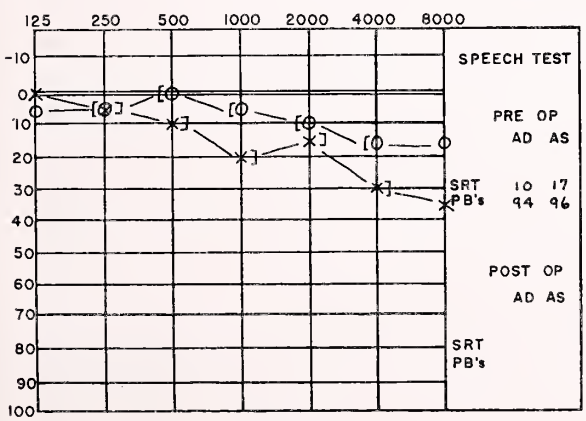


Fig. 3.

Summary

In summary, then, the diagnosis of an acoustic neuroma, especially an early or small one, is an otologic task. Every patient showing a unilateral sensorineural hearing loss should be suspected of having an acoustic tumor until proved otherwise. The patient should have the benefit of every available diagnostic tool or technique to make or rule out this diagnosis. Studies should include neurosurgical consultations, spinal tap, x-ray, tomograms, and air studies, when indicated. If an early diagnosis can be made and the tumor removed without the complications of facial paralysis, many disabling neurologic and psychologic postoperative deficits and disorders can be avoided or minimized. Pronounced postoperative complications generally occur when the diagnosis is not an early one, and the tumor enlarges to involve and stretch the seventh nerve until its fibers are spread thinly over the capsule of the tumor. When this occurs, it is difficult or impossible to spare this nerve.

Whenever the symptoms of unilateral sensorineural deafness, tinnitus, and balance problems are present in a patient, the otologist should counsel his patient and insist upon his coopera-

(Continued on Page 23)

OBSTETRICAL MANAGEMENT OF THE Rh NEGATIVE PATIENT*

WAYNE L. JOHNSON, M.D./SUZANNE H. CONRAD, M.D./CHARLES A. HUNTER, JR., M.D., Seattle, Washington

Perinatal mortality from Rh isoimmunization can be decreased by pre-term delivery of moderately or severely affected infants. Obstetrical management of the Rh negative patient with isoimmunization should include a detailed obstetrical history, blood grouping, Rh titers, and spectrographic analysis of amniotic fluid. According to the degree of the peak at 450 millimicrons on amniotic fluid analysis, the fetus is classified as being mildly, moderately or severely affected. Pre-term delivery of a moderately or severely affected infant is advisable, taking into consideration concomitant risk of prematurity.

About 15 per cent of all women are Rh negative. About 85 per cent of all men are Rh positive. Since the Rh factor is seldom taken into consideration in the choice of a mate, it is apparent that the pregnant Rh negative patient with the possibility of isoimmunization will occur regularly in obstetrical practice.

Modern medicine has made great strides in the care and management of the newborn infant with congenital hemolytic disease (erythroblastosis fetalis). Yet all the modern wonders of medicine can offer nothing to the macerated stillborn infant that died in utero. Pre-term delivery of the affected infant has been shown to decrease perinatal mortality from this disease.[1, 2] Thus, the problems in obstetrical management of the isoimmunized patient become: 1.—determining which fetus is in danger of succumbing to the disease in late pregnancy and, 2.—timing of delivery so that the detrimental effects of prematurity do not outweigh the beneficial effects of pre-term delivery.

In assessing these problems, one should consider the obstetrical history, blood grouping, Coombs titer, and amniocentesis with spectrophotometric measurement of the amniotic fluid.

obstetrical history

A detailed obstetrical history should be obtained on the first prenatal visit. If there is any evidence that previous pregnancies have terminated with the birth of an affected infant, the obstetrician should be alerted to the possibility of Rh disease affecting this pregnancy. Effects of isoimmunization may become progressively worse with succeeding pregnancies, and the present infant can be expected to be as severely affected, or more so, than the last, presuming he is Rh positive. On the other hand, a mother previously immunized by blood transfusion with Rh positive blood, or by injection of blood products including red cells, may be faced with severe hemolytic disease of her baby in the first pregnancy.

The patient's Rh type is also documented on the first visit. If the patient is Rh negative, a Coombs titer is done, and the father's genotype is determined. If the father is homozygous D/D, there is little likelihood that the fetus is Rh negative. If the father is heterozygous D/d, the fetus may be Rh negative and not affected with hemolytic disease, while if the father is Rh negative d/d, the chances of this fetus being Rh negative are excellent.**

Rh titers

At the initial visit, the estimated date of confinement is ascertained as accurately as possible. If the initial titer is positive, this indicates that the patient has been immunized. At approximately 28 weeks, the Coombs titer is repeated. If either titer is 1:64 or higher, there is possibility of an affected infant. Also, if there is a significant rise in titer (more than two-fold rise), this is presumptive evidence that the fetus is Rh positive and susceptible to hemolytic disease. If the titer is high, for example 1:512, and remains so without significant rise during pregnancy, this does not necessarily mean that the fetus is Rh positive or, indeed, whether it is or is not affected. If the patient exhibits a profound rise in Rh titer, this is presumptive evidence that the baby is Rh positive, but not conclusive evidence that the baby is affected. It is important to remember that the Rh titer is a maternal response and may not reflect fetal disease. Any patient who exhibits a titer of 1:64 or higher is consid-

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Reprinted from Northwest Medicine, Vol. 64, No. 3, Page 187-190, March, 1965.

**Routine Rh typing is now available in most well-equipped laboratories. More detailed, comprehensive testing of maternal and paternal blood can be obtained in only a few. Among these are the laboratories at the King County Central Blood Bank, Seattle, Eloise Giblett, M.D., and at the University of Oregon Medical School, Division of Experimental Medicine, Bernard Pirofsky, M.D. A fee is charged. The laboratories request at least 10 cc of whole blood, collected without additive, in a sterile tube. Ed.

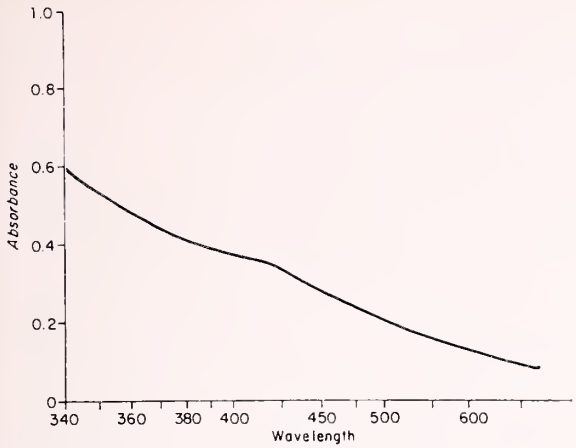


Fig. 1. Normal control curve.

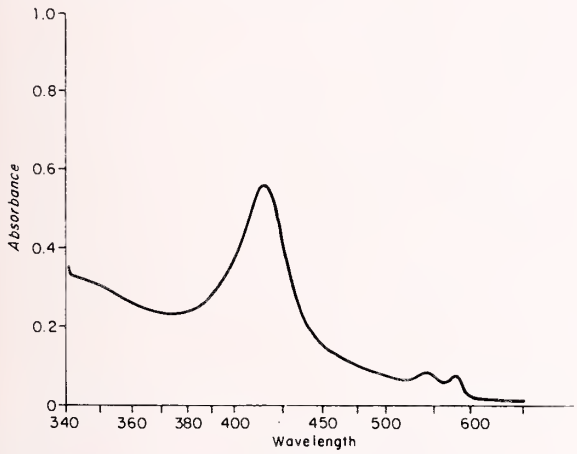


Fig. 2. Bloody specimen, fetus not affected.

ered a candidate for amniocentesis at 30 weeks gestation.

amniocentesis

Several series have been reported which indicate the value of this procedure for evaluating fetal response to hemolytic disease.[3-7] In the past year, at the University of Washington, 41 specimens of amniotic fluid, from 32 patients, have been analyzed. Ten of these were from Rh positive patients, and served as controls. We feel that this procedure is of clinical value in predicting severity of the disease in the fetus. The amniotic fluid is aspirated by transabdominal needle puncture, using aseptic technique. The puncture site is selected to the right or left of the midline, just below the umbilicus, on the side away from the fetal back, and well away from the fetal head. The skin is prepared and infiltrated with local anesthetic, and the needle inserted with aspiration as the uterus is entered. If blood is drawn back, it is assumed that it comes from the intervillous space of the placenta; the attempt is discontinued, and another site is selected. Approximately 10 ml of amniotic fluid are collected and put in a test tube covered with paper or metal foil to prevent exposure to light. If the analysis cannot be done immediately, the specimen is refrigerated until such time as it can be done. After centrifugation and filtration, the optical density of the specimen is measured in a Beckman DK-2A recording spectrophotometer. The usual range of measurement is from 340 to 700 millimicrons. No complications of amniocentesis occurred in this series.

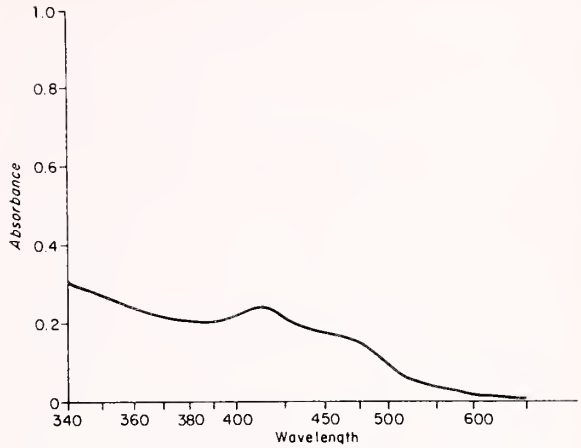


Fig. 3. Fetus moderately affected.

Figure 1 depicts a curve from a Rh positive patient serving as control for the technique. Notice the general downward slope of the line without any evidence of deviation in the range of 450 millimicrons.** Figure 2 shows the record of a specimen grossly contaminated with blood and still slightly pink after centrifugation and filtration. Notice the large peak at approximately 400 millimicrons and the two smaller ones between 500 and 600 millimicrons. Again, there is no evidence of a rise or hump in the curve at 450 millimicrons. Figure 3 shows a slight hump in the range of 450 millimicrons and was interpreted as indicating a mildly affected fetus. Figure 4 shows a large increase in the curve from the baseline in the area of 450 millimicrons and this was interpreted as a severely affected fetus. Figure 5 shows another large deviation from the expected decline in the curve in the range of 450 millimicrons and was again interpreted as a severely affected fetus. Figure 6 is the same as figure 5 with broken lines added in an attempt to evaluate the amount of rise from the baseline and give it a numerical value. A line is drawn with a straight edge across the

**Substance causing this rise is unknown. Many investigators have confirmed reliability of the test as an indicator of severity. It is conjectured that the hump is caused by breakdown products from fetal blood but analyses have failed to identify it.

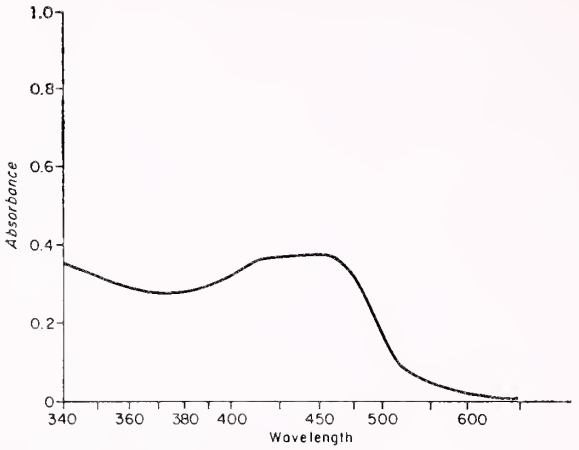


Fig. 4. Severely affected fetus.

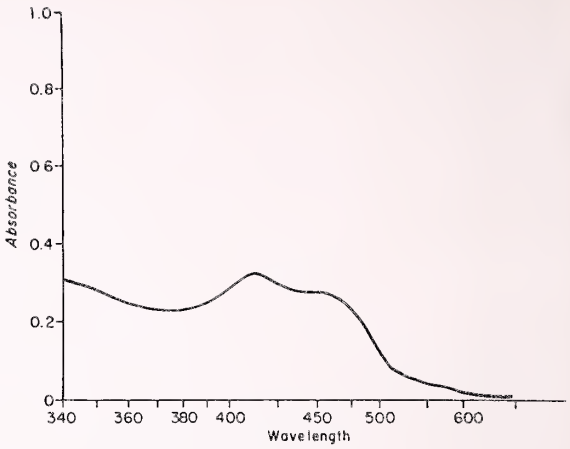


Fig. 5. Severely affected fetus.

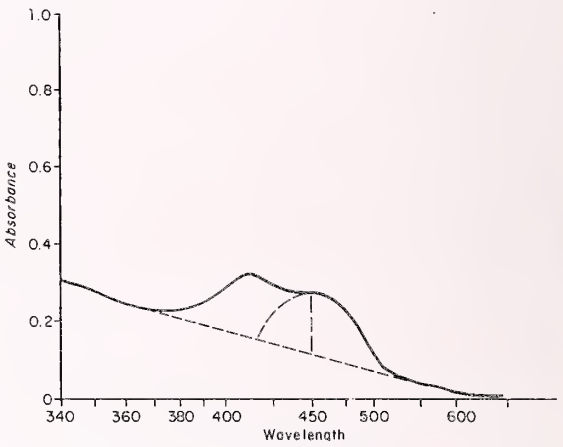


Fig. 6. Severely affected fetus, same as fig. 5 with broken lines to indicate evaluation of height of peak.

expected slope of decline. The distance at 450 millimicrons, from the top of the peak to the baseline, is measured in millimeters. This gives an estimate of the deviation of the hump in the region of 450 millimicrons wave length. The curved, broken line to the left is an attempt to complete the curve of the peak. The area under this curve is measured with a planimeter as another estimate of the deviation from the anticipated downward slope of the curve.

results

We have classified the baby after birth using the criteria shown in table 1.

In our series, two patients delivered infants severely affected according to those criteria. Amniotic fluid of both had shown large humps on analysis as depicted in figures 4 and 5. The height from the baseline on both of these curves ranged from 20 to 60 millimeters and the area under the curve ranged from 13 to 39 square centimeters. Both were predicted to have severely affected infants in the last trimester of pregnancy and both were induced prior to term. Both infants were treated by exchange transfusion soon after birth and did well.

TABLE 1

Criteria for Classification of Rh Negative Infants

Mildly affected or unaffected
- Good clinical condition
- Coombs negative or Coombs positive with mild disease, not requiring transfusion

Moderately affected
- Coombs positive
- Good clinical condition at birth, later requiring active treatment, including transfusion
- Hematocrit greater than 40 per cent

Severely affected
- Coombs positive
- May show clinical evidence of disease at birth, may be stillborn or hydropic
- Hematocrit less than 40 per cent
- Requiring immediate exchange transfusion

Six moderately affected infants were delivered in this series. Height of the curves from the baseline at 450 millimicrons ranged from 5 to 18 millimeters and the areas under the curve 2 to 12 square centimeters. Five of these were predicted to have moderately affected infants prior to delivery and one was predicted to have a mildly affected infant.

The remainder of the infants in this series were not affected or mildly affected and all were predicted correctly, prior to delivery. Height of the peak from the baseline was less than 10 millimeters in all instances, including control Rh positive mothers.

conclusions

Recommended management for the pregnant Rh negative patient includes:

1. An initial prenatal visit, at which time a careful obstetrical history should be taken.

If the patient is Rh negative, a Coombs titer should be taken at this time and the husband's genotype documented.

2. Repetition of the Coombs titer at 28 weeks. If either titer is 1:64 or higher, or a significant rise in titer occurs, amniocentesis and spectrophotometric analysis of amniotic fluid should be done at 30 weeks.

3. From these criteria, a prediction of mildly, moderately, or severely affected fetus is made. At 35 weeks, if one is still concerned about the severity of the fetal disease, a repeat titer and amniocentesis should be done.

4. If the fetus is considered to be affected mildly or not at all, the pregnancy is allowed to go to term. If a moderately-affected fetus is suspected, the pregnancy is allowed to continue to at least the 37th week, depending on fetal size. Then, delivery is accomplished, preferably vaginally, attempting to eliminate any significant risk of prematurity. If a severely-affected infant is predicted, depending on the obstetrical history and taking into consideration the fetal size and degree of prematurity, preterm delivery, preferably vaginally, is performed between 35 and 37 weeks of gestation.

Spectrophotometric analysis of amniotic fluid is a valuable laboratory tool for predicting the severity of hemolytic disease in the newborn. Its usefulness lies in evaluating the need for preterm delivery, which has been demonstrated to increase the perinatal survival rate of erythroblastotic infants. ■

U. of W. School of Medicine (98105)

abstracto

La mortalidad perintal debida a isoinmunizacion Rh puede disminuirese gracias al parto antes de termino en los bebes afectados en forma moderada o severa. El manejo obstetrico de la paciente Rh negativa con inumunizacion debe incluir una historia obstetrica detallada, determinacion del grupo sanguineo, titulos Rh, y el analisis espectografico del liquido amniotico. De acuerdo con el grado de la elavacion a 450 milimicras en el analisis del liquido amniotico, el feto se considera ligeramente, moderadamente o severamente afectado. El parto antes de termino de un bebe, moderadamente, o severamente afectado es aconsejable tomando en consideracion el riesgo concomitante de premadurez.

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ACOUSTIC NEUROMA—

(Continued from Page 19)

tion in further studies. If the neurological studies are negative and the patient continues to have the same signs and symptoms, the neurological examination should be repeated again within six months. This is the only way of making early diagnosis of acoustic neuroma which can spare the patient many additional disabling defects. By making an early diagnosis, too, we can do much to reduce postsurgical mortality and morbidity associated with advanced or large tumors.

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A NEW PHYSICAL SIGN FOR THE DETECTION OF SMALL PLEURAL EFFUSIONS*

Eugene Eisenberg, M.D., San Francisco

A previously undescribed physical sign of small pleural effusions was discovered in five patients attending a clinic for the treatment of advanced breast cancer. The sign consists of a sudden change in breath sounds at mid-inspiration. In each instance attention was first attracted by finding the level of diaphragmatic dullness at a higher level than had been noted previously. The level of dullness still moved down one or two interspaces between full expiration and inspiration. No other signs of pleural fluid or atelectasis were detectable. When the diaphragm of the stethoscope was placed at the level of diaphragmatic dullness at the end of expiration and the patient breathed in deeply, breath sounds were heard only faintly or not at all during the first half of inspiration. At mid-inspiration clear breath sounds suddenly became audible and were heard for the duration of the inspiratory movement. When the patient leaned forward normal breath sounds could be heard throughout the inspiratory phase of respiration.

This sign was detected in five patients during a 9-month period when the author was personally caring for 88 patients with advanced breast cancer. In each instance no other physical signs of fluid could be elicited. In routine x-ray examinations the fluid assumed the shape of the diaphragm in three of the five patients. In the other two, the presence of fluid was obvious in roentgenograms. Confirmation was obtained in all five patients by lateral decubitus roentgenograms and removal of 100 to 250 ml of fluid by thoracentesis.

Roentgenograms of the chest of one of the five patients taken two weeks after the sign was first detected are shown in Figures 1 and 2. In the two-week interval, additional fluid had accumulated, but the "break-through" breath sound was still present. The degree of movement of the fluid level between full inspiration and expiration can be seen in the posterior-anterior projection (Fig. 1). In full inspiration, the position used for routine roentgenograms, the fluid level on the right assumed the shape

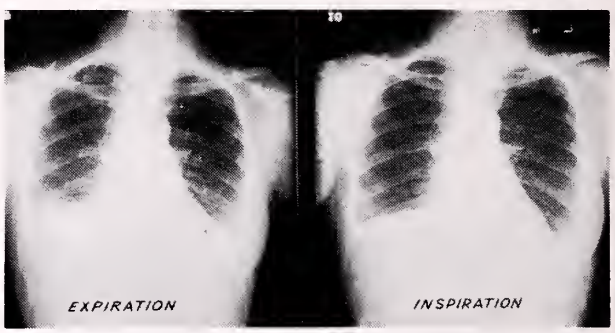


Fig. 1. — Roentgenograms, showing posterior-anterior view in full expiration and full inspiration. The positioning of the chest piece to elicit the "break-through" breath sound is shown by O. Note that fluid level assumes shape of diaphragm during inspiration.

of the diaphragm. This evidently occurs when the base of the lung retains its concave shape and overrides the fluid.

When a small amount of free fluid lies between the lung and the diaphragm without producing atelectasis, descent of the diaphragm causes the fluid level to move downward. As the fluid descends, it is followed by aerated lung. If the physician places the chest piece of the stethoscope just below the "high water level," he will hear no breath sounds, or only faint ones, after which normal breath sounds will become audible. Such a relationship between the fluid level, position of the chest piece, and change in breath sounds was confirmed by combined auscultation and fluoroscopy in two patients. The change in the posterior fluid level when the patient bends forward is shown in the lateral projection (Fig. 2).

This sign probably will not be encountered frequently. Its occurrence obviously depends on the presence of a certain amount of free fluid in association with only slight pleural inflammation and no atelectasis. When it is encoun-

* Reprinted from California Medicine, Vol. 102, page 208, March, 1965.



Fig. 2. — When the patient bends forward the fluid gravitates forward, uncovering the posterior lung and eliminating the "break-through" breath sound.

tered, the sudden change in breath sounds during inspiration is quite striking. The clinician who is aware of the significance of the "break-through" breath sound should find it useful in the detection of small pleural effusions when the usual signs cannot be elicited.

SUMMARY

In five patients being examined regularly at 4- to 6-week intervals, a previously undescribed change in breath sounds was audible when the chest piece of the stethoscope was placed over the area of diaphragmatic movement during respiration. The change consisted of an initial absence of respiratory sounds, followed by the occurrence of normal breath sounds midway during inspiration. The "break-through" breath sound was shown to be associated with the presence of a small pleural effusion; no other signs of pleural effusion could be elicited.

Department of Medicine, University of California Medical Center, San Francisco, California 94122.

This study was supported by US Public Health Service Grant No. CA-03489.

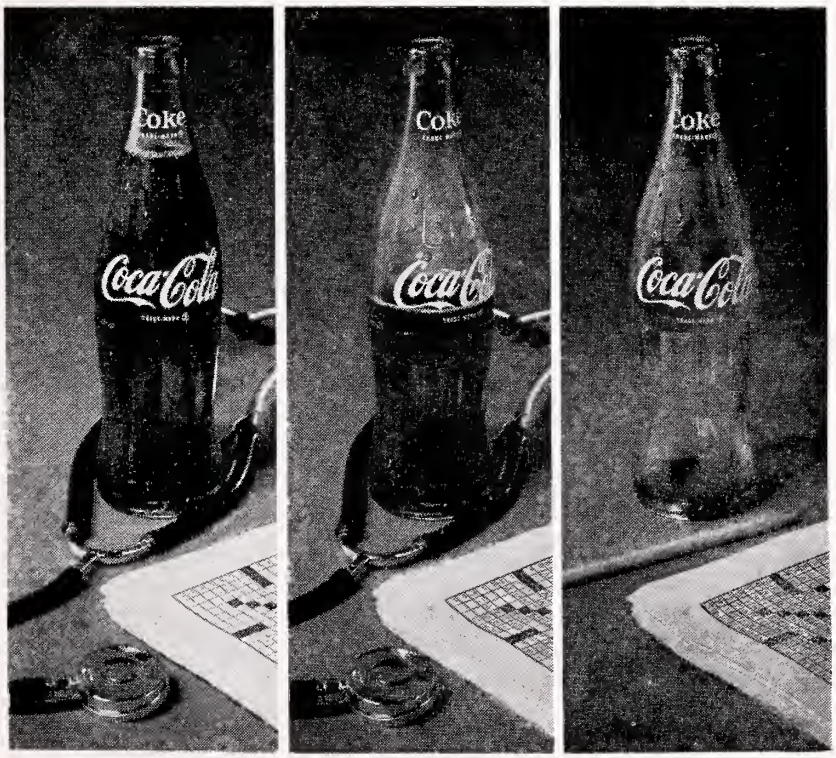
M. O. PEMBERTON, M.D.

1882—1965

Funeral services were held October 7, 1965, for Maurice Orear Pemberton, M.D., a physician in Deadwood for over 50 years.

Dr. Pemberton was born September 8, 1882 in Orearville, Missouri. In 1912 he graduated from the St. Louis, Missouri, Medical School. Following his internship he practiced medicine in Pilot Grove, Missouri, before associating with Dr. T. W. Moffitt in Deadwood. Dr. Pemberton was also a registered pharmacist.

He retired from medical practice in October 1953, and only recently was awarded a 50-year membership in the South Dakota State Medical Association.



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LOW BACKACHE*

Lewis Cozen, M.D. — Los Angeles, California
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When a person with backache is seen, the first thing to do is to find out how long he has had the pain. If the backache is of short duration, a day or two, there is no need for prolonged and expensive examinations. Usually the patient will say that he or she awoke with a painful back after an unusual straining and stooping incident the day before.

The pain may be severe or mild. There may be episodes of increased spasmodic pain as he moves.

The person will say when questioned that he or she is in excellent health generally and that he has not had episodes of back pain before.

Now the back is examined. There is no abnormality found — no deformity — except localized tenderness and spastically contracted muscles of the low back. A cursory examination is sufficient.

Treatment for the acutely painful back is instituted. The area of tenderness is infiltrated with 5 to 10 cc. of a local anesthetic solution. Injection should be made slowly to avoid reactions and the patient should be questioned regarding idiosyncrasies to local anesthetic solution before the injection is made.

Now the patient is asked to get up from the table and move around. If pain is still present the low back should be strapped with adhesive tape. Compound tincture of benzoin is painted on the skin and wide three inch strips of tape are now applied under tension. The tape should go around the front so that it encircles the back and pelvis for about two-thirds of the way.

What is the purpose of the injection of xylocaine or procaine and of taping the back? Besides anesthetizing a stretched ligament or muscle tendon aponeurosis, the injection may help relieve an area of spasm in the muscle by the distention of the solution.

Ethyl chloride spray may be used locally when the patient is allergic to local anesthetic solutions. The painful area is alternately sprayed and massaged with the other hand. Massaging prevents the skin being injured from freezing and helps break up the muscle spasm. Exactly how ethyl chloride works is not clear. It may dissipate the minute inflammatory reaction that is present by the massaging effect of the solution on a mechanically inflamed ligament or muscle.

The tape is effective by immobilizing the painful muscle and ligament.

There are many ancillary methods of treating the patient who has an acute backache. Medication to relieve pain, "Empirin and Codeine," "Percodan," and "Darvon" and even "Demerol" can be used. If muscle spasm seems to be severe, one of the relaxants, "Robaxin," "Soma," "Trancopal," and "Norflex" may be administered orally. Dosage is easily found for each drug.

If the pain does not subside rapidly within one or two days, the patient should be re-examined and treated as if he had chronic or recurrent back pain which will be described below.

Chronic or recurrent back pain requires elaborate investigation. First, the history of all aspects of the pain is probed. The age of the patient rules out many diseases. If the patient is under 40 years of age malignancies are almost impossible as a presenting complaint of back pain. There is no such thing as never in medicine and while metastatic lesions as well as primary malignancies do cause back pain in childhood and early adult life, they do so exceedingly rarely as a presenting or first complaint.

The younger age group of patients with back pain, under 60, are more prone to have sprains and strains of the ligaments as well as intervertebral disc lesions than are the older people. Degenerative lesions — osteoarthritis — as well as malignancies are more prone to occur in older people. Osteoporosis is another cause of back pain and occurs only in people past 50. Incidentally, some men and women of 50 have already painful osteoporosis of the spine.

All details of the pain in backache are important. The type of pain, dull or sharp, the effect of rest or activity.

* Presented at the Annual Meeting of the South Dakota State Medical Association, May 18, 1965, Watertown, South Dakota.

If the pain is present while at rest and the patient is over 50 years of age, an additional finding is thereby present for possible diagnosis of a malignancy. If the pain, on the other hand is relieved by rest, an additional point in favor of the diagnosis of mechanical origin of the pain; for instance a ruptured disc, degenerative arthritis or postural strain is obtained. The nature of the pain in kidney disorders such as kidney stone is often pathognomonic. The pain with kidney stone is very severe and is not relieved by rest so that the patient is forced to move around out of bed walking a good deal. The pain in ruptured disc lesions is severe, constant and gripping, but it does not have the sickening quality that usually accompanies the pain of malignancy. The patient with a painful back as a result of a malignancy either primary or secondary says that there is no time when he is free from pain. The patient with a ruptured disc or with pain from severe degenerative arthritis of the articular joints of the spine states that he is free from pain at intervals. Changes in weather aggravate the pain of osteoarthritis whereas they have no effect on the pain of malignancy.

The patient should be asked if coughing or sneezing or straining while having a bowel movement increases the pain. If it does, another point in favor of either a ruptured disc or some affection pressing upon a nerve root is obtained.

How far does the pain go down one leg? Does the pain go down both legs? If the pain is confined to the low back region, it is unlikely that it is caused by an intradural or extradural lesion pressing upon the nerve roots. Pain from a ruptured intervertebral disc or from a tumor in the vicinity of the nerve roots almost invariably causes pain in one leg, less frequently in both legs, and most infrequently only in the back. If the pain is present all the way down the leg to the foot and toes, it is again more likely that it is pain as a result of pressure on a nerve root rather than referred pain from an arthritic lesion of a joint or from a sprain of a ligament.

One can find out something about the pain by the methods of relief obtained for it. If the person says the pain is relieved by a heating pad, it is hardly likely that the patient has a ruptured disc or a malignant lesion. If the pain is relieved by aspirin constantly, one must immediately give great credence to the possibility of the patient having an osteoid osteoma. The pain in osteoid osteoma is relieved by nothing as readily and as completely as it is by aspirin.

The duration of the pain is important. Has it been there for days, weeks, months? Is it there constantly? If the pain is not constant but comes at intervals of say every two months or six months and has been there in that fashion for a number of years, it is hardly likely that the patient has a malignant lesion. It is much more likely that the pain is present as a result of an intervertebral disc lesion or from osteoarthritis of the joints of the spine. If the patient says that the pain has been present for five years or so, one can immediately assume that no malignant lesion is present, since a malignant lesion would not allow a patient to have pain for many years without becoming easily manifest.

The occupation, the habits, of the patient should be ascertained to as great an extent as possible. If the patient is a laborer, one might suspect at least that some compensation neurosis element might be present in his complaints. If the patient's habits are markedly irregular, if he has no steady type of work, one might think that the pain is merely a cover-up for a drug addict.

Now the past history is obtained. What diseases have been present? What operations have been performed on the patient, for instance? It is surprising often that unless information is asked for in several different manners, it is not obtained. For instance, the patient may not say that she has had a breast removed for carcinoma unless specifically asked what operations have you had. They often try to relegate unpleasant things like operations for cancer from their conscious thoughts even when being examined by a physician. At other times they may not know their relevance of having had such diseases as typhoid fever or tuberculosis. They do not know, naturally, that these diseases can involve the bones and joints of the spine many years after the acute illness has been present. Even the history of a serious accident may have been forgotten and if the patient had a very manifest injury elsewhere, for instance, a head injury, he may have injured his spine at the same time, and by the time the head injury had recovered, the acute symptoms from the back condition would be gone and only several months or years later would the back condition cause fresh symptoms.

Even the family history can be of importance. A history of tuberculosis in the family, a history of cancer in many members of the family, a history of rheumatoid arthritis, or degenerative

arthritis, or other forms of arthritis may point to the correct diagnosis in the patient being examined.

Now a patient's systems should be gone over. Complaints about the head, eyes, ears, nose, chest, stomach and intestinal tract, as well as the genito-urinary tract. Symptoms in any of these areas may aid in the diagnosis. For instance, if the patient complains of pain or symptoms in many of his systems, one would become suspicious of a neurosis. If the patient complained of only one system, for instance, the gastro-intestinal tract, one might suspect the presence of an ulcer with posterior perforation or of a carcinoma in the gastro-intestinal tract. Similarly, symptoms of disturbance of the genito-urinary tract can give the examiner a clue to the diagnosis of back ache originating from the genito-urinary tract, either the kidneys, ureter or bladder.

The weight of the patient should be noted. It is infrequent for weight not to be lost in the presence of cancer. If the patient has had severe back ache for several months and still states that he is gaining weight and has not lost any weight, one can be pretty sure that there is no malignancy. At times the recent accumulation of weight can be indicative of a static cause of the back pain such as a ruptured disc or chronic low back strain of the ligamentous structures of the back.

Now for the examination. The patient should be disrobed completely. This is important and no satisfactory examination can be made with the patient partially clothed. In particular, in addition to the back being completely exposed, it is important to have the shoes and socks off. Flat feet can be noted at this time and this is a somewhat frequent source of back pain. The presence of marked bowing of the legs can be significant in the examination since such bowing can furnish a clue to the diagnosis of Paget's disease of the spine as a cause of the back pain. Swelling of the knee joints and deformities of the feet can be indicative of the presence of rheumatoid arthritis as the cause of the back pain. The presence of bluish varicolored legs would immediately place the examiner on the alert for the possibility that the back pain is caused by occlusion of the aorta or of the iliac arteries. This type of examination of the patient will also tell the examiner other things. For instance, he may learn if the patient is an addict or an alcoholic. He will also see if there are any scars or abrasions that have not been mentioned during his interrogation of the patient.

Now the back itself is examined. The posture of the back is noted. If he has excessive curvature, either lordosis, kyphosis or lateral curvature, scoliosis may be of significance. The presence of shortening of the lumbar area of the spine should be noted if it is present since this would connote the presence of spondylolisthesis. The presence of excessive folds of skin might connote an excess of elastic tissue which is an accompaniment of excessively relaxed joints and often accompanies joints which are easily sprained.

The presence of a list to one side is significant since this occurs most frequently with a ruptured disc. The presence of spasm of the lumbar muscles is noted easily, and this is usually significant of a ruptured intervertebral disc.

A gibbus can sometimes be seen and the significance of this is that it would make one think of tuberculosis of the spine with destruction and gibbus or kyphos formation.

Now the back is palpated. The presence of a step-off deformity at the lumbosacral junction is significant of spondylolisthesis. Point tenderness over the origin of the sacrospinalis muscles is significant of chronic sprain. The presence of pain on percussion over the lumbar spine at one space or body is also significant of disease there, if one suspects a destructive lesion such as malignancy or tuberculosis. If the pain is not severe, one suspects a ruptured intervertebral disc. If on percussion the patient states that the pain is felt down the leg as well as in the back, one thinks then of a ruptured intervertebral disc and this has been called Spurling's sign.

Motion of the spine in flexion, extension, lateral flexion and rotation is noted. In almost all diseases of the lumbar spine, motion is limited in all directions. If there is a ruptured intervertebral disc, motion is often limited more in lateral flexion to the side of pain than it is in other directions.

Chest expansion is noted by having the examiner place both hands on the lower rib cage and asking the patient to inspire deeply. Normally there should be approximately two inches of chest expansion. If the patient is old, chest expansion can be diminished to one inch normally. If, in any individual, there is one-half inch chest expansion or less, the possibility of ankylosing spondylitis is to be ascertained. The patient is now asked to lie in a recumbent position on the examination table. The examining table must

be a firm one for accurate examination. With the patient supine, leg lengths are measured accurately for low back pain may be caused by inequality of leg lengths. Motion of the hip joints in all directions is tested since hip joint disease can be a cause of pain in the low back. If hip joint disease is present, there is often a flexion contracture of the hip joint, and this can be noted by the Thomas test which consists of flexion of one hip as far as it will go and extending the other.

Now pulsations in both ankle areas are felt, both the posterior tibial and the anterior tibial artery. Color and temperature of the feet are noted to tell if any significant arterial insufficiency is present as a possible cause for low back pain. Now the patellar and Achilles reflexes are elicited. Inequality is significant although equal diminution of all reflexes is not uncommon in normal people. The sensation of both feet is noted by a pin or/and by lightly touching all areas of the foot. Significant nerve root pressure is accompanied by diminution of one of the reflexes and by diminution of sensation over a portion of the foot depending upon the nerve root that is involved.

Straight leg raising is now attempted again to see if there is any pressure upon one of the lower lumbar or upper sacral nerve roots. Usually if such pressure is present, straight leg raising is markedly diminished and is accompanied by pain. The Cram test is of particular significance here since it particularly localizes nerve root pressure. This test consists of pressure in the popliteal space with the leg elevated and with the knee in a few degrees of flexion. The additional stretch of the popliteal nerve will cause pain in the buttock, low back and in the leg and foot if there is tightness of the nerve root as a result of pressure upon them in the lumbosacral spine.

Treatment

Treatment for the chronic or recurrent low back ache can be very difficult and frustrating at times. Conservative treatment for ruptured lumbar disc, postural strain, osteoarthritis and lumbosacral strain are all similar.

The first thing to do is to ascertain what treatment has already been tried on the patient by himself or by previous physicians. If the patient has been in the hospital for several weeks of traction treatment it would be unwise to repeat this form of therapy. On the other hand, one must be careful to be sure that the treatment the patient has had was adequate. For instance, if traction has been used one must ascertain whether the traction was used in the home rather than in the hospital. Chances are that if it was used at home it was not adequate. If the patient has had a period of bed rest, one should question him in detail concerning the rest, whether it was really rest in bed or whether the patient merely was in bed for a short period of time and would get up frequently during the day.

Assuming that no specific treatment was previously obtained by the patient, several things are indicated. First, the patient should be told to make sure that the bed is a firm one. Boards should be ordered under the mattress, and if the pain is severe, the patient should be told to place the boards on the mattress and cover them with one or two blankets. These boards act by immobilizing the spine at night or during the day for bed rest purposes. They also act by massaging as a result of pressure on the tender areas of the spine. A substitute for boards under the mattress is to advise the patient to sleep on the floor. Either the mattress can be placed on the floor or several blankets so that some padding is present.

Now the patient should be cautioned to wear correct shoes. If the foot is unsupported additional strain is thrown on the lumbosacral area. For a woman to wear high heels increases the strain on the structure of the lumbosacral spine. This is unwise. She may be allowed to wear her high heeled shoes during the evening only. The man should wear shoes that are well made and have adequate support and rigidity in the shank to prevent foot strain and secondary low back strain.

Some form of immobilizing apparatus is now ordered generally. For men this would consist of a lumbosacral type of canvas belt. For the woman this would be a corset. The more rigid braces made of steel and leather are more expensive and are more objectionable cosmetically since they can be seen through the clothes and probably are no more effective than the canvas corsets and belts. The belt and corset will remain on the pelvis during all motion and positions of the lumbosacral spine. It is difficult for a steel brace to immobilize the spine in extreme positions.

Medication should be ordered of analgesic medication. "Darvon" is probably most satisfactory since it is non-habit forming whereas other analgesics of medium potency are habit forming. These include "Percodan," "Codeine,"

and "Demerol." A muscle relaxant should be ordered as well. "Robaxin," "Soma," "Norflex" and "Trancopal" are some of the muscle relaxants that should be prescribed. The effective dosage is easily ascertained for each medicine.

The application locally of moist heat is probably more effective in relieving pain than is any other single modality. The use of the hydrocollator is helpful since with this inexpensive appliance moist heat can be applied with a minimum of effort. If the pain is not severe an ordinary electric heating pad or even a hot water bottle can be effective in relieving the pain.

Diathermy, ultrasound, galvanic and faradic stimulation and light massage can all be helpful. Heat modality should be used if no relief is obtained after several treatments with another modality.

If the pain is unabated by one or two days in bed at home, the patient should be advised to enter the hospital for a period of traction treatment. There are other advantages to hospitalization for the patient with the severely painful back. Hypodermic medication, intramuscular medication and intravenous medication can be used in the hospital. Bed rest can be enforced there whereas it is difficult to be sure of complete bed rest at home.

In the hospital traction, usually pelvic traction, with twenty pounds of weight to start with and this weight is increased to thirty over the first three or four days, is instituted. In addition, "Demerol" or "Dilaudid" is ordered. As soon as the pain diminishes the intramuscular injections are stopped and oral medication in the form of "codeine" or "tricadan" is substituted.

It is often advisable to have the patient receive a dilute solution of procaine, .1% 250 cc., by drip intravenously. The instillation of one ampule of robaxin into the procaine solution helps relax the muscles as well. If the patient is allergic or sensitive to procaine, 5% alcohol can be substituted for the procaine. This intravenous medication can be used daily while the pain is severe.

If a physical therapy department is available in the hospital, ultrasound and wet heat are ordered daily. The dosage of ultrasound is 1 watt/sq. cm. While the patient is in his hospital bed the traction should be removed about three or four times a day and wet heat in the form of hydrocollator packs should be applied to the low back and to the buttock and thigh of the painful leg.

Bed rest and traction in the hospital should be continued for a period of one to two weeks. Towards the end of the period of bed rest and traction the patient should be allowed up for short periods of time and should be ambulatory. If pain is still present he should wear his corset or belt and should use crutches to remove some of the weight from the lower back. Before leaving the hospital the patient should be instructed in stretching and postural exercises by a competent physical therapist. He should be advised to continue wearing the corset or belt until the pain has disappeared completely. He should be advised to continue the postural and stretching back exercises daily indefinitely in the hope that they may help prevent recurrences of severe pain.

September 30, 1965

Dr. Richard Van Demark
South Dakota Journal of Medicine
711 North Lake Avenue
Sioux Falls, South Dakota

Dear Dr. Van Demark:

The members of SAMA wish to thank the members of the South Dakota State Medical Association for your generous gift. We are sure that this journal will bring us much good information and help to keep us up to date on current medical problems.

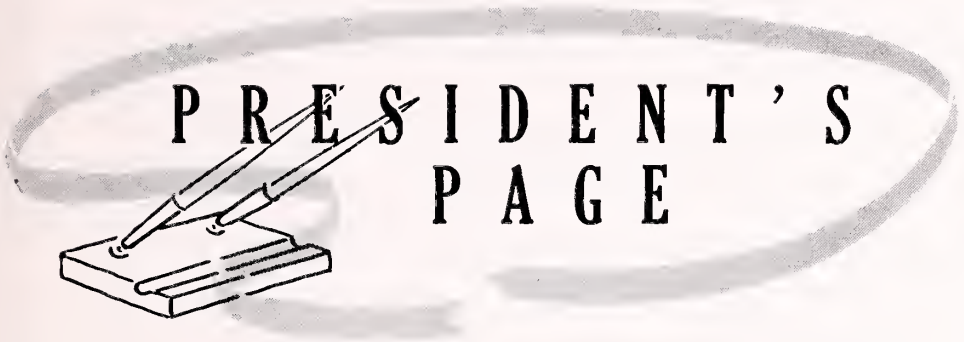
We appreciate this gesture and your interest in us.

Sincerely yours,

Jay Hubner, Sec.

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PRESIDENT'S PAGE

Dear Members:

Your President attended the Special Session of the House of Delegates of the AMA when it met in special session October 2nd and 3rd, 1965. There were many reports on this meeting with varied interpretations. It would seem appropriate, in spite of that, to give the salient features of that meeting as interpreted by your President.

The delegates and members of this special meeting were rather unique in that the seriousness of this meeting was prevailing in their behavior. The participants were very earnest in their quest for answers to the problems of the summer. They were looking for leadership and unity toward a common goal. The delegates understood well the gravity of their problems.

The hearings before the Reference Committee on Legislation and Public Relations were the only ones necessary. The hearings lasted 7½ hours and everyone had an opportunity to expound their opinions. The Committee listened relentlessly and then worked most of the night to come up with a report for the House which met the following morning.

The House made a few amendments but as a whole accepted the Committee report.

The almost unanimous decisions were as follows:

1. The Code of Ethics of the AMA requires all physicians to obey the laws of the U. S.; therefore it is the duty of every physician as a law abiding citizen to help implement Medicare, which now is a law of our land.
2. The Legal Counsel of the AMA and the Judicial Council are in agreement that individuals may at their own discretion participate or non-participate in Medicare, but that any group of two or more or the AMA as a whole cannot concert in any action suggesting non-participation without being in restraint of Interstate Commerce.
3. The House desires that the AMA Trustees and Advisory Committee continue in cooperating with the Dept. of H.E.W. in setting up the regulations for the Medicare Program.
4. Certification under Medicare should be as has been current and customary in the past.
5. The House felt very strongly that wherever desirable Blue Shield be the carrier of the Voluntary part-B.
6. The House felt that disputes over customary fees should be arbitrated by the local Medical Society.
7. The House felt that utilization committees should be composed only of practicing physicians.
8. The House felt that the members should be fully informed of their rights, duties and choices as pertains to Medicare and other Federal legislation.
9. The House felt and recommended that doctors not sign nondiscriminatory pledges.

The House felt it was illegal and unethical for it to recommend non-participation in Medicare but it recommends very strongly without reservation 100% participation in AMPAC.

Fraternally yours,
Paul Hohm, M.D., President

Path C A P sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

A NEW IMMUNOLOGIC TEST FOR PREGNANCY

In 1927 Aschheim and Zondek demonstrated the presence of gonadotrophic substances in the urine of pregnant women. The definite relationship of these substances to pregnancy was confirmed by the observation that they disappeared rapidly after parturition. It was not until 1938, however, that the hormone (chorionic gonadotrophin) was isolated from placental villi growing in tissue culture.

The majority of current pregnancy tests are based upon the assay of placental hormones, the chief one being chorionic gonadotrophin. Chorionic gonadotrophin is detectable in the urine about the twenty-fourth day of the gestation period. The peak production of chorionic gonadotrophin occurs between fifty and ninety days after which time the level falls throughout the remainder of the pregnancy and may reach undetectable levels late in pregnancy. At 72 hours post-partum chorionic gonadotrophin is no longer found in blood or urine.

For many years pregnancy testing depended upon the use of various animals, e.g., mice, rabbits, male frogs, toads, etc. However, there are many inherent disadvantages in any biological testing system, such as cost and maintenance of a large colony of animals, and biological, seasonal, or individual variation in sensitivity of the test animal to the chorionic gonadotrophin. It has now been well established that human chorionic gonadotrophin can be detected by serological methods. Moreover, there is a close correlation between the results obtained by the immunologic methods and those obtained with standard biological tests.

The principle involved in immunologic testing is based upon the neutralization of anti-human chorionic gonadotrophin (Gravindex Antiserum*) by the chorionic gonadotrophin in the urine of a pregnant patient. The end point is an agglutination inhibition reaction involving latex particles which have been coated with human chorionic gonadotrophin (Gravindex Antiserum*). If chorionic gonadotrophin is present in the urine it will neutralize the anti-human chorionic gonadotrophin and no antibody will remain to react with the sensitized latex particles and they will remain in suspension (positive test). However, if there is no chorionic gonadotrophin in the urine the antiserum will not be neutralized. It will then be free to react with coated latex particles and agglutination will occur (negative test).

The procedure is technically simple and is far superior to the frog test in sensitivity and specificity. In some cases test results have been positive within a week of the first missed menstrual period.

So far, no false positive tests for pregnancy have been reported utilizing this procedure, including examination of urine from postmenopausal women and from individuals taking large doses of phenothiazine derivatives or other drugs.

The percentage of false negatives appears to be less than 3% and has been noted most commonly in abnormal pregnancy or very early during pregnancy before the level of chorionic gonadotrophin is sufficiently elevated in the urine to be detected by this procedure. In this case it is recommended that the test be repeated 41 days from the last menstrual period. The test can be performed on a random urine specimen although the first morning specimen is preferred. If prompt examination is not feasible the specimen may be refrigerated or frozen. Grossly bloody urine is not a satisfactory sample nor is serum.

*GRAVINDEX®, Ortho Pharmaceutical Corporation, Raritan, New Jersey.

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News Notes • Changes • Births • News

Pop's Proverb

The things you do in life are like little seeds — they grow. But will they be flowers or weeds?

NEWS NOTES

John F. Barlow, M.D., Diplomate, American Board of Pathology, is now associated with **Drs. Karl H. Wegner** and **Richard J. Weaver** in the private practice of pathology at the Laboratory of Clinical Medicine in Sioux Falls and also at the Sioux Valley Hospital.

* * *

Presbyterian Hospital in Philadelphia has set a precedent in community education by launching a weekly television panel. Two physicians appear each Tuesday evening and hold a 10 minute discussion. To date the series has included such topics as heart surgery, immunization, deafness, geriatrics, and plastic surgery.

The tapes are available to medical groups and health organizations at a charge of five dollars per 10-minute tape. Anyone interested is asked to contact Mr. Carl L. Mosher, Director, Presbyterian Hospital, Philadelphia, Penna. 19104.

Charles F. Falkner, M.D., a native of Canada, has recently established his practice in Murdo, South Dakota. Born in Winnipeg, Manitoba, the doctor obtained his medical education in Canada. After completing his internship he practiced at Kipling, Saskatchewan, until 1960 when he moved to Deadwood, South Dakota. He then decided to further his education and returned to Canada. Dr. Falkner is married and the father of four children.

* * *

Mario I. Herrera, M.D., a specialist in internal medicine and cardiology, is now practicing in the Professional Arts building in Aberdeen. Dr. Herrera is a native of the Dominican Republic and received his medical degree from the University of Santo Domingo in 1957. During the past year he has been chief resident in internal medicine at Lakewood Hospital, Lakewood, Ohio.

* * *

T. A. Angelos, M.D., Canton, South Dakota, was named to fill the term of Dr. H. W. O'Banion on the Canton School Board. Dr. Angelos had previously served on the school board from 1956 to 1962.

Charles J. Bobeck, M.D., Rapid City physician and surgeon, has left that city for Long Beach, California, where he will be engaged in the practice of general surgery.

Dr. Bobeck came to Rapid City in May 1960 and with Dr. F. R. Williams formed the Williams Surgical Clinic.

* * *

At their July 8th dinner meeting, the Sixth District Medical Society voted to adopt the trial computer system which has been discussed by the various district medical societies in recent months.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

Paul Hohm, M.D., President of the South Dakota State Medical Association, spent a busy week visiting the Black Hills, Northwest and Brookings-Madison Districts in early October. A total of ninety-five physicians gathered for Dr. Hohm's discussion of Medicare.

* * *

Dr. Albert C. Martin, a general practitioner, has joined the Donahoe Clinic of Sioux Falls and is in charge of the Luverne, Minnesota, offices. Dr. Martin has practiced in Luverne for fifteen years and will occupy his same offices.

* * *

The 1966 Scientific Session of the American Cancer Society will be held at the St. Francis Hotel in San Francisco on May 11, 1966. The symposium will present advances in the diagnosis and treatment of the common cancer sites in this country. It is open to all members of the medical and dental professions, and students. There is no advance registration or registration fee. For further information, write: Director of Professional Education, American Cancer Society, Inc., 219 East 42nd Street, New York, New York 10017.

* * *

The Fourth Cleft Lip-Cleft Palate Diagnostic Clinic was held at the Crippled Children's Hospital and School in Sioux Falls on October 14th.

Any physician who is interested in participating in future clinics is welcome. Correspondence should be directed to the Speech and Hearing Clinic, Vermillion, South Dakota.

The next Clinic will be held in Vermillion, South Dakota, January 20, 1966.

Joseph C. Murdy, M.D., former Murdo physician, has assumed duties at the Veteran's Hospital in Hot Springs, South Dakota.

* * *

The American Thoracic Society and its Louisiana affiliate announce that reservations are now being taken for the 1965 Postgraduate Course on Pulmonary Function in Health and Disease. To be held at the Louisiana State University School of Medicine in New Orleans, the Course will run four days from Monday, November 29 through Thursday, December 2. The tuition is $100, payable in advance, for physicians with the exception of members of the ATS and also those supported by Tuberculosis Association scholarships — both of whom receive a $25 reduction on their tuition. Inquiries and registration letters should be sent to the Course Chairman, Hurst B. Hatch, Jr., M.D., Suite 407, 305 Baronne Street, New Orleans, Louisiana 70112.

* * *

The guest speaker at the University of South Dakota's Career Day in October was **Gerald Tracy, M.D.** of Watertown. Career Day is sponsored by the medical students at the University for high school students and college students interested in medicine as a career

* * *

The Nu-Voice Club of South Dakota will meet in the KELO Community Room, Sioux Falls, at 1:30 P.M., Saturday, December 4th.

All physicians and speech therapists are welcome and are encouraged to attend.

The Nu-Voice Club is comprised of laryngectomees.

The American Medical Women's Association recently held their 50th Anniversary convention at the Sheraton Chicago Hotel, Chicago, Illinois. The organization was formed in 1915, although its roots go back much further — to 1878 when New England Hospital Medical Society began as the world's first organization of women physicians.

* * *

The American College of Physicians announces their Postgraduate Course ♯9 on Internal Medicine will be held at the University of Alabama Medical Center, January 10-14, 1966. Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pennsylvania 19104. Fees: A.C.P. Members $60.00; Non-members $100.00.

* * *

The Watertown District Medical Society has held two meetings in past months. The first of these was held in the Library of Memorial Hospital, Watertown, on June 6th, at which time a Medical Computer System was discussed. The second meeting, on September 7th, was an extensive business meeting with no program scheduled.

* * *

DIS'A AND DATA

G. M. Huet, M.D., Huron, attended the XI International Congress of Radiology held in Rome, Italy, September 22-28, 1965 . . . . **H. L. Saylor, M.D.,** Huron, attended the Federal Aeronautics Administration Seminar for Aviation Medical Examiners in Chicago . . . .

Dr. and Mrs. B. F. King, Aberdeen, attended the Mass celebrated by Pope Paul VI at Yankee Stadium, New York .... **Dr. and Mrs. Paul Bunker** of Aberdeen left October 6th for Tokyo, Japan where Dr. Bunker will attend the International Congress of Oto-Rhino-Laryngology. They will also be in Hong Kong for several days at the end of their stay in the East while Dr. Bunker attends another medical meeting .... **Dr. Paul Hohm,** President of SDSMA, made his official visitation to the Aberdeen District Medical Society on October 6th. Twenty-five members were in attendance and heard a presentation by Dr. Hohm on Medicare and the recent AMA Special House of Delegates meeting. Dr. Tom Bunkers presented a scientific paper on "Otologic Aspects of Head Trauma." Richard C. Erickson, Executive Secretary, accompanied Dr. Hohm to Aberdeen.

William Hanson, M.D., Huron, attended the meeting of the Commission of Internal Affairs of the State Medical Association at Sioux Falls, September 11, 1965.

WEDDING BELLS

Donald Faber, M.D., and Miss Darlene Jensen were united in marriage October 17, 1965. Miss Jensen, formerly of Dell Rapids, is a graduate of the Sioux Valley Hospital School of Nursing and is presently taking the Anesthesia Course at McKennan Hospital in Sioux Falls. Dr. Faber has offices in Sioux Falls and in Lennox.

STATEMENT OF OWNERSHIP

The South Dakota Journal of Medicine is published monthly at Sioux Falls, South Dakota, in the headquarters of the publisher, South Dakota State Medical Association, 711 North Lake Avenue, Sioux Falls, South Dakota. R. E. Van Demark, M.D., of the Sioux Falls Clinic Building, Sioux Falls, South Dakota, is the Editor. South Dakota State Medical Association is the Publisher. The publication is owned by the South Dakota State Medical Association, a corporation. There are no bondholders, mortgagees, or other security holders.

Signed: R. E. Van Demark, M.D.



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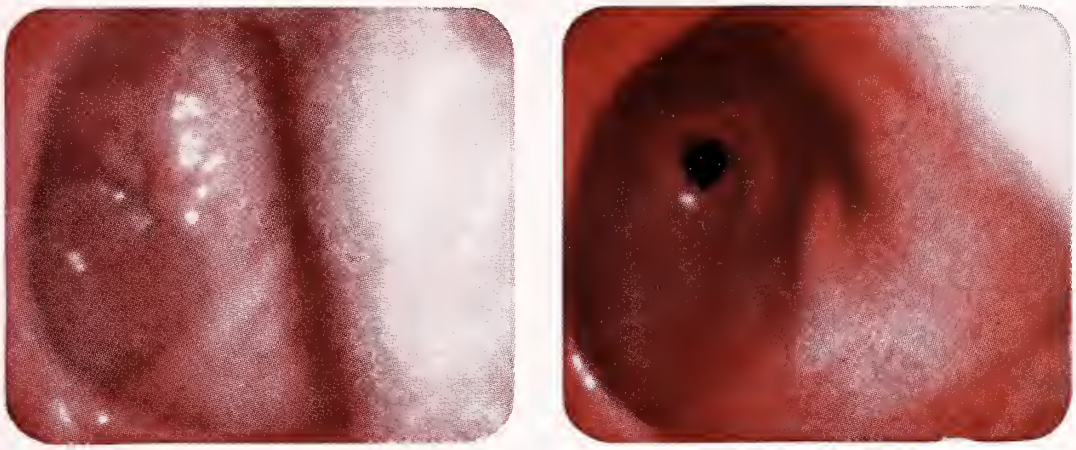
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Intragastric photography studies[1]

A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.

Now you can see Pro-Banthine® at work
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Pro-Banthine is so effective in anticholinergic action that it may be employed in visualizing the entire pyloric region.

In addition to the intragastric photographs, cinegastroscopic studies[2] have demonstrated graphically not only its effectiveness but the superiority of Pro-Banthine over belladonna alkaloids.

Pro-Banthine produced complete cessation of gastric, antral and pyloric motor activity with a dose of 6 mg. intravenously. This is approximately one-third the usual oral dose of 15 mg.

Atropine at full normal dosages did not produce such cessation. It required double the usual oral dose of atropine, 0.8 mg. intravenously, to duplicate the aperistaltic action of Pro-Banthine. This dose of atropine produced pronounced discomfort and tachycardia with ventricular rates as high as 150 per minute.

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Side Effects and Contraindications—Urinary hesitancy, xerostomia, mydriasis and, theoretically, a curare-like action may occur. The drug is contraindicated in patients with glaucoma or severe cardiac disease.

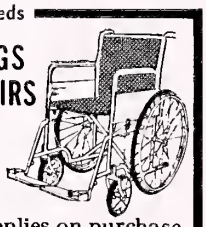
1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.

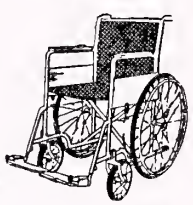
2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

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Keep patients under close supervision and make periodic blood counts. Use cautiously in patients sensitive to pyrazoles, in patients with histories of peptic ulcer, and in conjunction with sulfa drugs, the sulfonylurea hypoglycemic agents, and insulin, the actions of which may be potentiated.

In mobilizing urate deposits, the drug may precipitate acute attacks of gout, urolithiasis, and renal colic especially in the initial stages of therapy. Ensure adequate fluid intake and alkalinize the urine. With renal impairment, test renal function periodically.

Adverse Reactions
The most frequent are upper gastrointestinal disturbances. The drug may activate peptic ulcer. Rash occurs infrequently. Although not reported to date, blood dyscrasias are a possibility.

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[illegible] has been followed as the currently available uricosuric agents for [illegible] of gout.*

Anturane, brand of sulfinpyrazone, was developed in the Geigy laboratories. Its pharmacologic activity is limited almost exclusively to increasing the urinary excretion of uric acid. For this reason, it is a drug of choice in chronic tophaceous gout and acute intermittent gout. It is not intended for relief of acute attacks of gout.

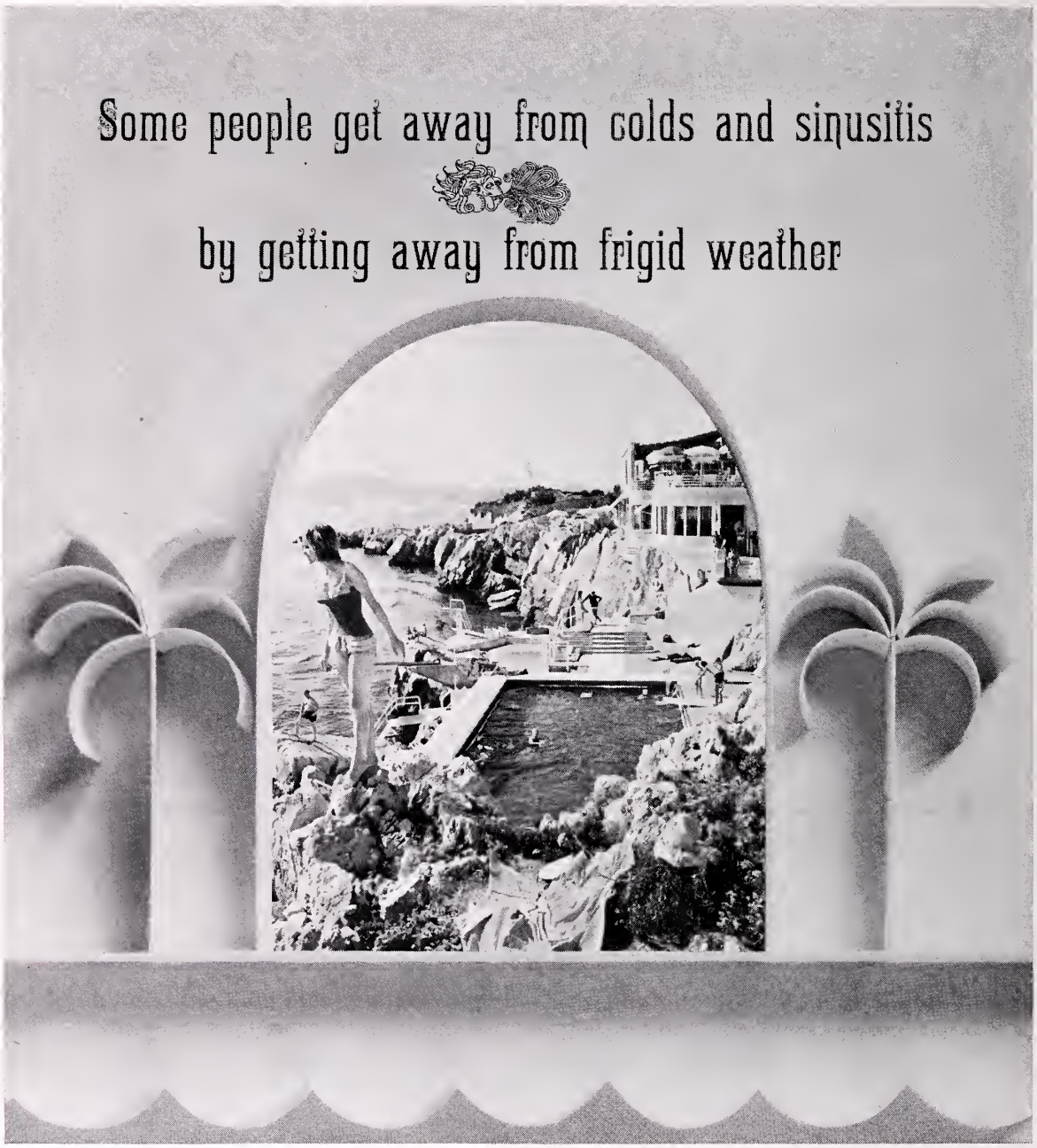
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*Kuzell, W. C., et al.: Effect of sulfinpyrazone on serum uric acid in gout: a long-term study, Geriatrics 19:894, 1964.

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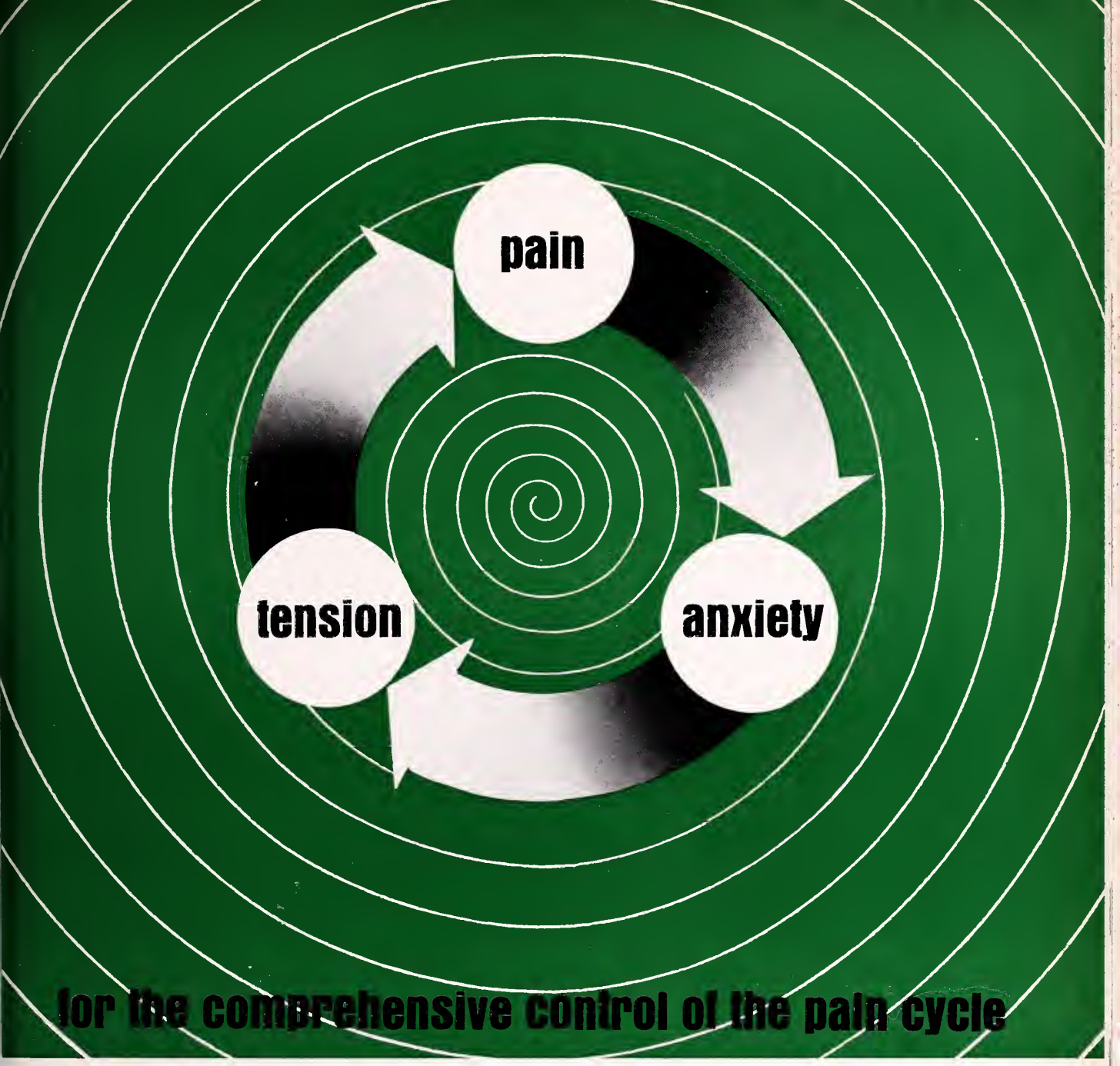
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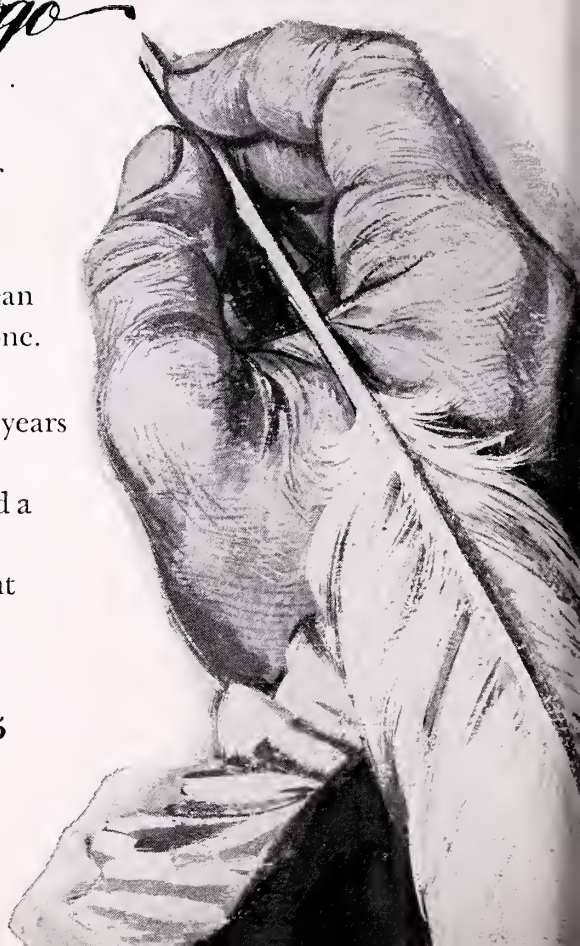
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*Dorhout Mees,E.J.,and Geyskes, G.G.: Acta med.scandinav. 175:703,1964.

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Contraindications: Allergic or idiosyncratic reactions to carisoprodol.

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(1) Frykman, H.M.: Minn. Med., Vol. 38, Jan. 1955. (2) Poth, E.J.: The J.A.M.A., Vol. 163, No. 15, April 13, 1957. (3) McGivney, J.: Texas State Jour. of Med., Vol. 51, No. 1, Jan. 1955. (4) Stern, F. H.: Jour. of The Amer. Ger. Soc., Vol. 11, No. 3, Mar. 1963. (5) Weekes, D. J.: N.Y. State Jour. of Med., Vol. 58, No. 16, Aug. 1958. (6) Abbott, P.L.: Jour. of Oral Surg., Anes. & Hosp. Dental Serv., Vol. 19, July 1961. (7) Weekes, D. J.: E.E.N.T. Digest, Vol. 25, No. 12, Dec. 1963.

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JOURNAL OF MEDICINE

JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION AND THE SIOUX VALLEY MEDICAL ASSOCIATION

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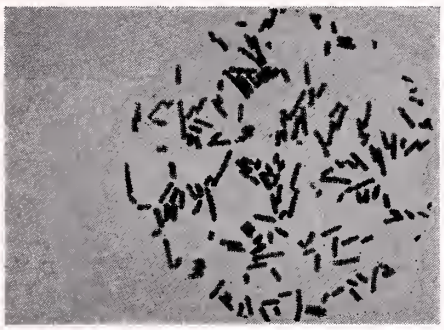
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Side effects: Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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Contraindications
Edema, danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. Because of the increased possibility of toxic reactions, the drug should not be given when the patient is senile, or when other potent chemotherapeutic agents are given concurrently. Large doses of Butazolidin alka are contraindicated in patients with glaucoma.

Precautions
Before prescribing, the physician should obtain a detailed history and perform a complete physical and laboratory examination, including a blood count. The patient should be kept under close supervision and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools. Regular blood counts should be made. The drug should be used with greater care in the elderly.

Warning
If coumarin-type anticoagulants are given simultaneously, the physician should watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea and sulfonamide-type agents and insulin. Patients receiving such concomitant therapy should be carefully observed for this effect.

Adverse Reactions
The most common adverse reactions are nausea, edema and drug rash. The drug may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, generalized allergic reaction, stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia are also possible side effects. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently.

Average Dosage
Initially, give 400 mg. daily (one capsule q.i.d), reducing this, if possible, when a favorable therapeutic effect has been obtained. If after one week there has been no response, discontinue the drug. Butazolidin alka contains antacids and an antispasmodic to minimize gastric upset.

Note: The physician should be fully aware of dosage, precautions, adverse reactions, and contraindications as contained in the complete prescribing information.

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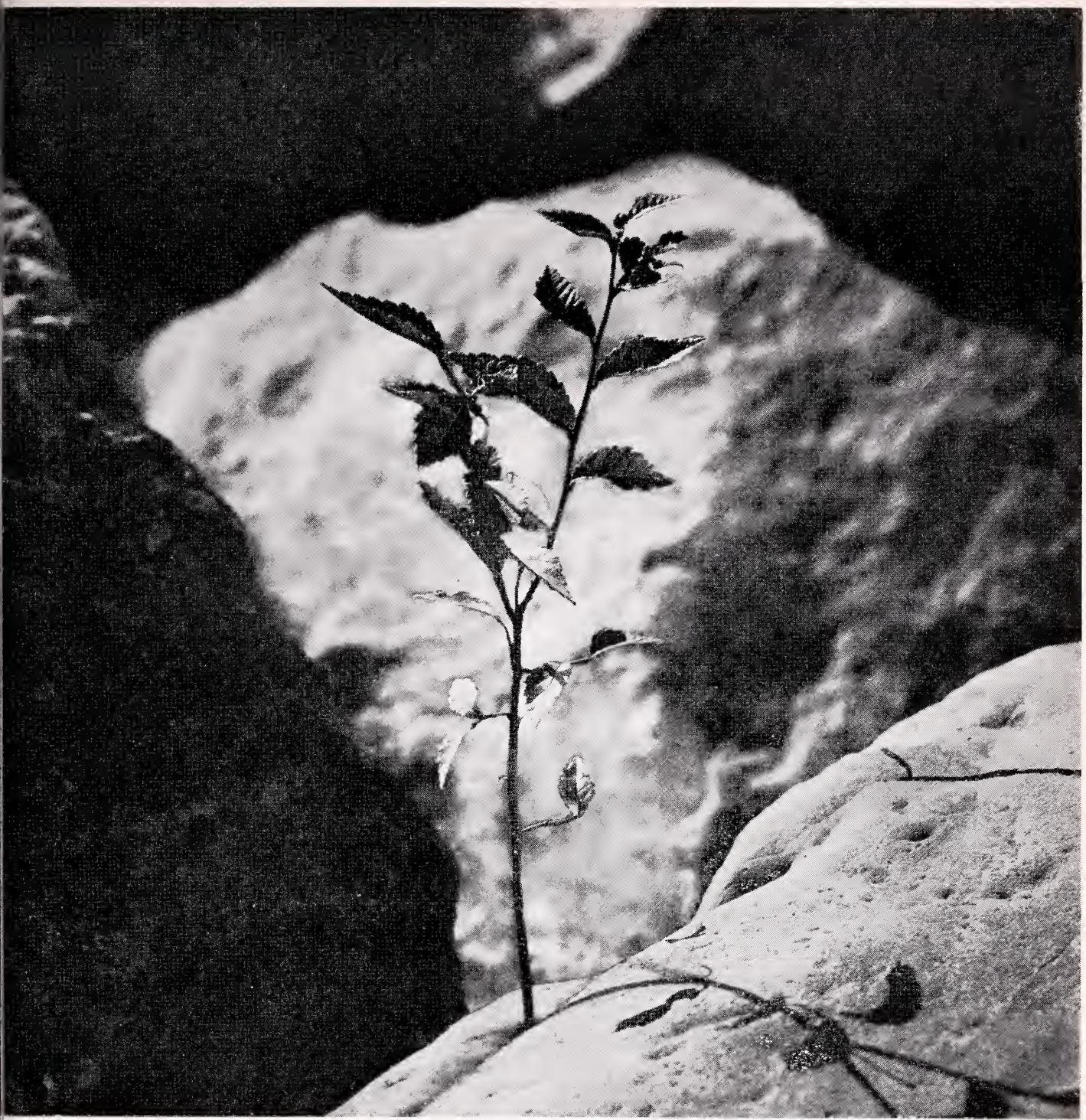
Contraindicated in comatose or greatly depressed states due to CNS depressants and in cases of existing blood dyscrasias, bone marrow depression and pre-existing liver damage. *Principal side effects,* usually dose-related, may include mild skin reaction, dry mouth, insomnia, fatigue, drowsiness, dizziness and neuromuscular (extrapyramidal) reactions. Muscular weakness, anorexia, rash, lactation and blurred vision may also be observed. Blood dyscrasias and jaundice have been extremely rare. Use with caution in patients with impaired cardiovascular systems.

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Precautions: *Meprobamate*—Careful supervision of dose and amounts prescribed is advised. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after use for weeks or months at excessive dosage. Abrupt withdrawal may precipitate recurrence of preexisting symptoms, or withdrawal reactions including, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, the dose should be reduced and operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Grand mal seizures may be precipitated in persons suffering from both grand and petit mal. Prescribe cautiously and in small quantities to patients with suicidal tendencies.

Side effects: Side effects associated with recommended doses of 'Deprol' have been infrequent and usually easily controlled. These have included drowsiness and occasional dizziness, headache, infrequent skin rash, dryness of mouth, gastrointestinal symptoms, paresthesias, rare instances of syncope, and one case each of severe nervousness, loss of power of concentration, and withdrawal reaction (status epilepticus) after sudden discontinuation of excessive dosage.

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Meprobamate—Drowsiness may occur and, rarely, ataxia, usually controlled by decreasing the dose. Allergic or idiosyncratic reactions are rare, generally developing after one to four doses. Mild reactions are characterized by an urticarial or erythematous, maculopapular rash. Acute nonthrombocytopenic purpura with peripheral edema and fever, transient leukopenia, and a single case of fatal bullous dermatitis after administration of meprobamate and prednisolone have been reported. More severe and very rare cases of hypersensitivity may produce fever, chills, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, anaphylaxis, stomatitis and proctitis. Treatment should be symptomatic in such cases, and the drug should not be reinstituted. Isolated cases of agranulocytosis, thrombocytopenic purpura, and a single fatal instance of aplastic anemia have been reported, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity has been reported, usually after excessive meprobamate dosage. Suicidal attempts may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Dosage: Usual starting dose, one tablet three or four times daily. May be increased gradually to six tablets daily and gradually reduced to maintenance levels upon establishment of relief. Doses above six tablets daily are not recommended even though higher doses have been used by some clinicians to control depression and in chronic psychotic patients.

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Dosage: *Children under 25 pounds*—5 mg. per pound of body weight every six hours. *Children 25 to 50 pounds*—125 mg. every six hours. *Adults and children over 50 pounds*—250 mg. every six hours. For severe infections, these dosages may be doubled.

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RECENT CONCEPTS OF RENAL FUNCTION

W. O. Read, Ph.D.
Professor of Physiology
University of South Dakota
School of Medicine
Vermillion, South Dakota

The present concept of kidney function dates from the arguments laid down by Bowman in 1842, Ludwig in 1844 and Hiedenbain in 1874. Cushney[1] critically reviewed the relevant data up to 1917 and proposed his "modern view" in which urine formation began by the separation of a protein-free filtrate of plasma across the glomerular capillary walls. As the ultrafiltrate passed down the tubule, tubular cells reabsorbed a fluid the composition of which resembled the extracellular body fluid. This early simplified view left unanswered the specificity of tubular reabsorption by which the tubular cells reabsorb specific constituents of the tubular fluid and it avoided the mechanism by which the tubular fluid is concentrated.

The micropuncture technique, developed by A. N. Richards[2] in the early 1920's and applied to mammalian kidney by A. M. Walker[3] in 1941, has been the basis for a rapid understanding of kidney function. The recent use of this technique by Gottschalk,[4] Wirz,[5] Ullrich,[6] Giebisch[7] and others has yielded insight into specific aspects of tubular function and has provided information on many controversial problems.

Urine Concentration

One of the remarkable features of mammalian kidney function is the ability to produce a concentrated or dilute urine depending upon whether the body requires conservation or release of water. E. B. Verney's work[8] had shown that the concentration of the urine was controlled by the antidiuretic hormone (ADH) released from the posterior pituitary. Exactly where ADH acted on the kidney to produce urine concentration was a matter of some conjecture. H. W. Smith[9] had proposed a thermodynamically questionable mechanism in which ADH facilitated active transport of water across the distal tubular epithelium. Brodsky et al.[10] calculated that the energy required for such a hypothetical pump to transport water at the rates necessary would exceed by some 1,000 times the capabilities of the tubular cells. Smith's proposal simply could not work.

Relevant to urine concentration are some early experiments reported by Ribbert in the publication Virchow's Archives for the year 1883 (p. 169). In these experiments, after removal of one kidney of a rabbit, the medulla of the remaining kidney was excised as completely as possible. These animals could survive for 48 to 60 hours. The urine from the demedullated kidney was dilute and the volume was about three times that of the nondemedullated kidney. Ribbert's crude experiments were repeated by Housman in 1902 with the same results. Housman concluded that the absence of the renal medulla interfered with the concentrating ability of the kidney. Seven years later, Peter related the length of the loop of Henle in the medulla to the ability of the kidney to concentrate the urine. Crane in 1927 again detailed this aspect of kidney function and, more recently, Schmidt-Nielsen and O'Dell[11] have reemphasized this important point. Indeed, Edel-

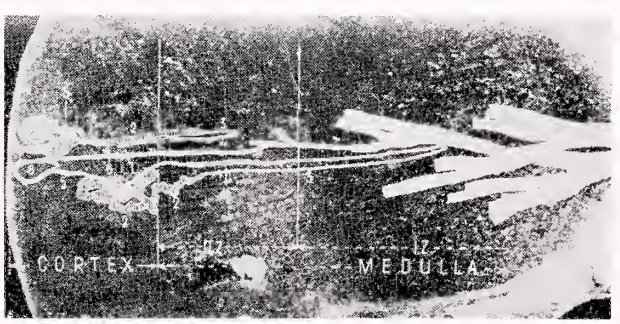


Fig. 1. Distribution of tubular segments in different zones of the rabbit kidney. From Ljungberg, E., **Acta med. scandinav.**, supp. 186, 1947.

The contents of this paper were summarized in a talk given at the 69th annual meeting of the Sioux Valley Medical Association, Sioux City, Iowa. The subjects covered reflect the personal interest of the author. A number of equally important topics have been omitted.

Work reported from the author's laboratory was supported, in part, by the South Dakota State Heart Association.

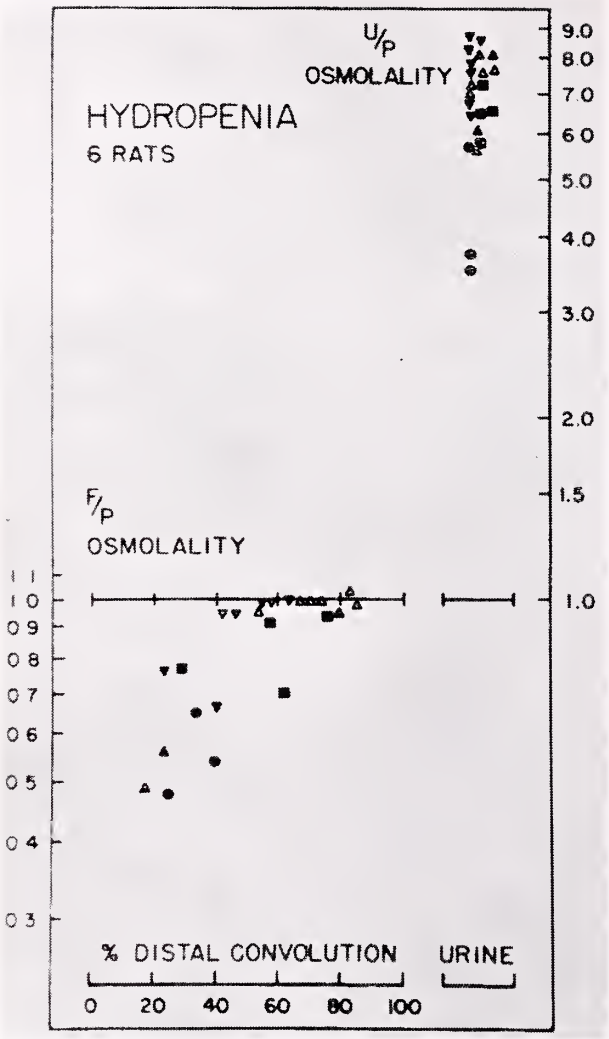


Fig. 2. Osmolality ratios of fluid from the distal convulted tubule (F/P) and of urine (U/P) during hydropenia in rats. From Gottschalk, C. W., **The Physiologist.** 4: 35, 1961.

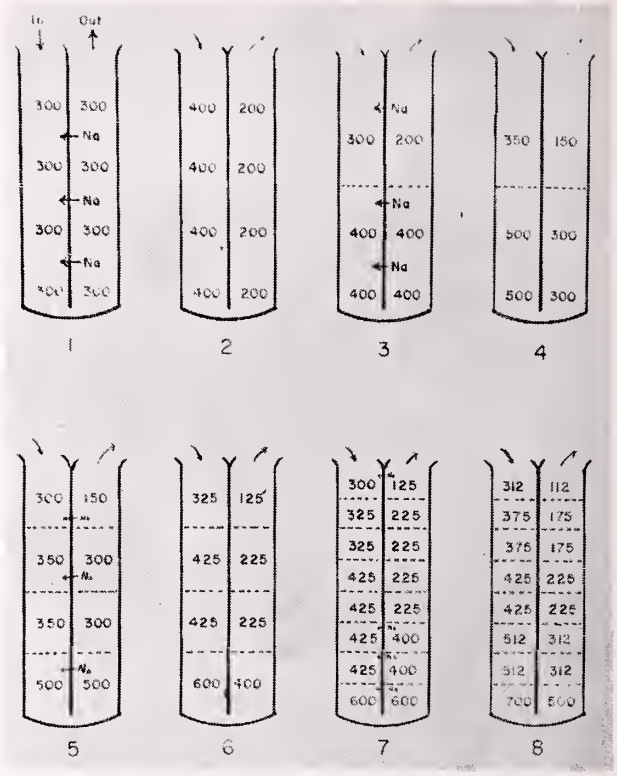


Fig. 3. The countercurrent multiplier consists of a tube which doubles back upon itself in the form of a hairpin curve. In the figure, two assumptions are made; (1) the ascending limb is impermeable to water, (2) the ascending limb can establish a limiting gradient of 200 mOsm/L between its contents and that of the descending limb by active transport of sodium (and passive diffusion of chloride). Step 1 shows the initial fluid at 300 mOsm/L (representing osmolarity of glomerular filtrate) in the tubule. Sodium is transported from the ascending limb (step 2) until the limiting concentration gradient of 200 mOsm/L is established. In step 3, a quantity of new fluid is introduced at the inflow, forcing fluid along the tubule, and ejecting a similar volume at the outflow. Sodium again is transported from the ascending limb to the descending limb until (step 4) the limiting gradient of 200 mOsm/L is established. In step 5, quantity of new fluid is introduced into the inflow, forcing fluid along the tubule, and ejecting a similar quantity at the outflow. Again, sodium is transported (step 6) from the ascending limb to the descending limb until the limiting gradient of 200 mOsm/L is established. Steps 7 and 8 are extensions of the process. By step 8, a concentration difference of 400 mOsm/L has been developed between the inflow and the point of reversal of the loop. Finally, with continuous inflow, a steady state arises; the fluid entering the system at the upper end of the descending limb becoming more and more concentrated as it moves towards the hairpin bend and rediluted on its way back up the ascending limb. During the development of the gradient, the outflow fluid is hypo-osmotic to the inflow and the sodium transported out of the ascending limb becomes trapped in the loop. At any level, no large concentration difference exists between ascending and descending limb but, depending on the length of the loop, a considerable concentration difference develops between the fluid at the inflow and the fluid at the point of reversal of the loop.

mann et al.[12] point out that the loops of Henle are much shorter in the new born animal than in the mature animal and suggest that this, in part, is responsible for the inability of the infant to concentrate the urine. In 1933, Burgess et al.[13] noted that only those species possessing a thin segment in the loops of Henle responded to ADH with urine concentration. It was natural to conclude that the urine was concentrated in the loop of Henle and that the action of ADH was to promote water reabsorption in the thin segment of the loop of Henle.

This view was completely shattered when Wirz in 1956[14] and Gottschalk and Mylle[15] showed conclusively that fluid in the early distal tubule was always hypo-osmotic whether the kidney was concentrating or not. The obvious conclusion drawn from this important observation is that urine concentration occurs in the collecting ducts and not in the loops of Henle.

What, then, was the functional relationship between the renal medulla, the loop of Henle, the collecting ducts and urine concentration?

Fortunately, a search had begun as early as 1942 by a group at the University of Basel, Switzerland. These investigators saw in the structural arrangement of the loop of Henle the possibility for the operation of a countercurrent multiplier system. In such a system two streams of fluid moving in opposite directions, given the proper requirements, can act to concentrate materials along the length of the tubes (Figure 3).

According to Pai[16] there are three basic types of nephrons in all mammalian kidneys. They vary as to the site of origin. In the outermost portion of the cortex are found nephrons with short loops of Henle and lacking a thin limb. In the middle zone of the cortex are found relatively short nephrons with a short thin segment. The longest nephrons begin in the deep cortex at the cortico-medullary boundary (the juxtamedullary nephrons). The proximal convoluted tubule courses irregularly in the vicinity of its glomerulus, and then extends almost directly into the medulla in a long loop. The loop possesses a long thin segment. After bending, the thin limb gradually changes into the thick portion of the distal segment. The distal segment returns directly to the glomerulus of origin, where it comes in direct contact with the afferent arteriole.

As applied to the kidney, the long loops of Henle, reaching into the medulla, constitute a countercurrent multiplier.[17, 18] The minimal requirements for the system to work are that the ascending limb of the loop must be relatively impermeable to water and it must have an outwardly directed sodium transport system. The descending limb need have no rigid requirements except that it must not be impermeable to both sodium and water. Given these requirements, the system acts as a countercurrent multiplier and can produce hyperosmotic interstitial fluid. Isosmotic fluid enters the descending limb of the loop of Henle where the sodium concentration is increased progressively either by diffusion of water into the hypertonic interstitium or by diffusion of sodium from the interstitium into the tubule, or both. Sodium (chloride) is actively transported out of the ascending limb while water is retained; thus increasing the sodium concentration of the interstitium. In Wirz's[14] original treatment of the subject,

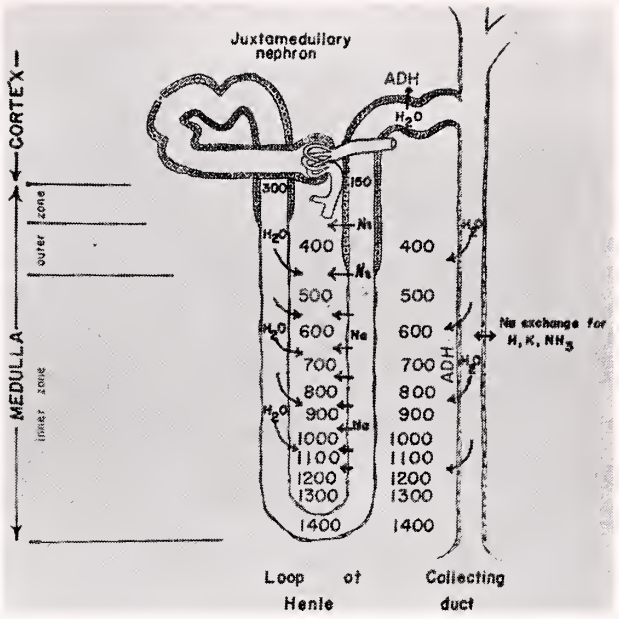


Fig. 4. In the kidney, the long loops of Henle reaching deep into the medulla, constitute a countercurrent multiplier. The minimal requirements for the system to work are that the ascending limb of the loop of Henle must be relatively impermeable to water and it must have an outwardly directed sodium transport system. The descending limb need have no rigid requirements except that it must not be impermeable to both sodium and water. Given these requirements, the system acts as a countercurrent multiplier and produces a hyperosmotic interstitial fluid. Isosmotic fluid enters the descending limb of the loop of Henle where the sodium concentration is increased progressively either by diffusion of water into the hypertonic interstitium or by diffusion of sodium from the interstitium into the tubule, or both. Sodium is actively transported out of the ascending limb while water is retained; thus increasing the sodium concentration of the interstitium.

he believed that active sodium transport was limited to the thick portion of the ascending loop, but more recent studies of Ullrich et al.[19] show that the osmotic pressure continues to rise in the inner zone of the medulla suggesting that sodium transport occurs over the whole length of the ascending portion of the loop. In any event, following its passage through the loop of Henle, the hypo-osmotic tubular fluid enters the distal tubule, where, depending upon the presence or absence of antidiuretic hormone, the fluid may become isotonic with blood or remain hypotonic. During passage of the fluid through the collecting ducts, the collecting ducts serve as osmotic exchangers which allow the equilibration of the final urine with the hyperosmotic interstitium of the medulla and papilla. In the presence of antidiuretic hormone, the permeability of the collecting ducts to water is high and the fluid is given up to the hyperosmotic interstitium. The final urine attains an osmolar concentration equal to that of the interstitium.

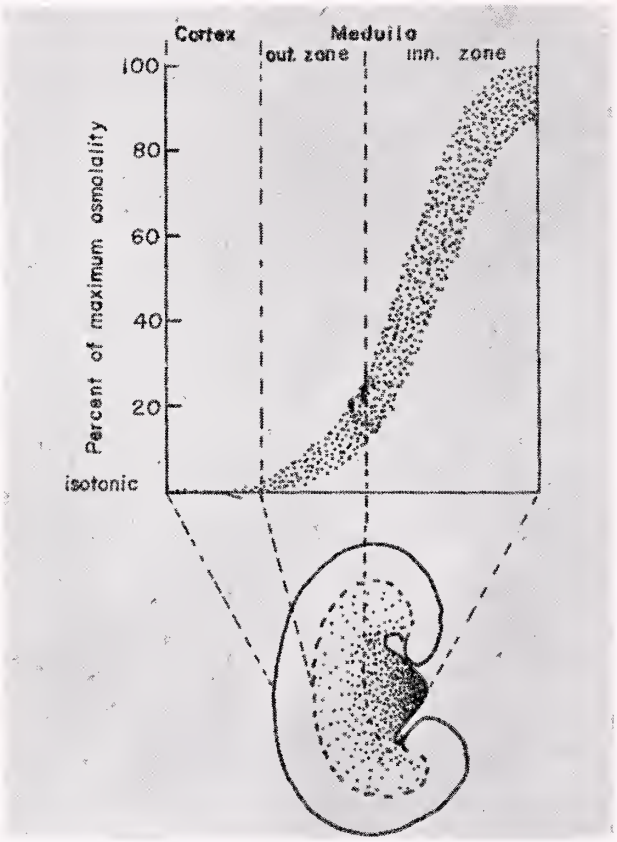


Fig. 5. Osmolality of renal tubular fluid determined from cortex to papilla in hydropenic rats. (Adapted from Wirz, Hargitay and Kuhn, **Helv. Physiol. Pharmacol Acta**, 9: 196, 1951).

As predicted by the countercurrent multiplier system, Wirz, Hargitay and Kuhn[20] demonstrated that there was indeed a progressive increase in the osmolality of the fluid within the renal medulla, with the highest values occurring in sections taken from the tip of the papilla. The osmolality of the fluid in cortical structures was practically the same as blood. These investigators showed that the kidney consisted of concentric shells of increasing osmolality from cortex to medullary papilla. These results have been confirmed repeatedly.[21-26]

Urea appears to play a special role in the concentrating mechanism. Published data show that the urine can be concentrated to a higher level osmotically when urea is a major solute.[27] It is known that if protein intake is restricted before a concentration test, the ability of the kidney to achieve a maximal concentrating effect is reduced, whereas a high protein intake enhances the concentrating ability of the kidney. It is quite possible that because of the high rate of protein anabolism in the growing infant, very little urea is excreted which limits the concentrating ability of the infant kidney. Levinsky and Berliner[28] favor the view that during antidiuresis the urea of the tubule, entering the collecting duct, diffuses back into the medullary interstitium along a concentration gradient created by the withdrawal of water as the urine is concentrated. This adds to the osmolality of the interstitium and allows for greater concentration of the urine.[29, 30] During the antidiuresis, there is a progressive increase in the concentration of urea in transverse slices of the medulla as one proceeds from corticomedullary junction to the tip of the papilla.[30A] Tuniger and Schmidt-Nelson[30B] say that urea formation in the papilla cannot account for the high concentration of urea at this site. Urea must, therefore, be absorbed from the collecting ducts. About 70 per cent of the filtered urea enters the collecting ducts and about 13 per cent is excreted in the urine. Therefore about 57 per cent of the filtered urea is reabsorbed in the collecting ducts.

Similarly, potassium enjoys a unique position in regard to the urine concentrating ability of the kidney. In potassium depletion a consistent abnormality of renal function is a diminished ability to concentrate the urine. The diluting ability of the kidney may be quite normal.[31, 32] From the data reported by Manituis et al.,[33] Gottschalk et al.[34] and Giebisch and Lozano[35] it appears that, in the rat at least, loss of concentrating ability in potassium depletion is caused by a severe decrease in permeability of the collecting ducts to water. There appears to be a defect in sodium reabsorption in the collecting ducts as well. Whether a similar lesion occurs in the human is problematical.[36, 37] Kleeman and Maxwell[38] suggest the additional factor of inadequate release of antidiuretic hormone as contributing to the renal defect in potassium depletion.

The disturbance of renal architecture which is present in many forms of chronic renal disease opens the possibility that the anatomical arrangement of the medullary loops of Henle and vasa recta necessary for medullary hypertonicity is impaired. Kleeman et al.[39] believe this to be a distinct possibility in the hyposthenuria of pyelonephritis.

Renal Blood Flow and Urine Concentration

In the operation of the countercurrent multiplier system of urine concentration, it seems evident that the sodium which is pumped out of the ascending limb of the loops of Henle can-

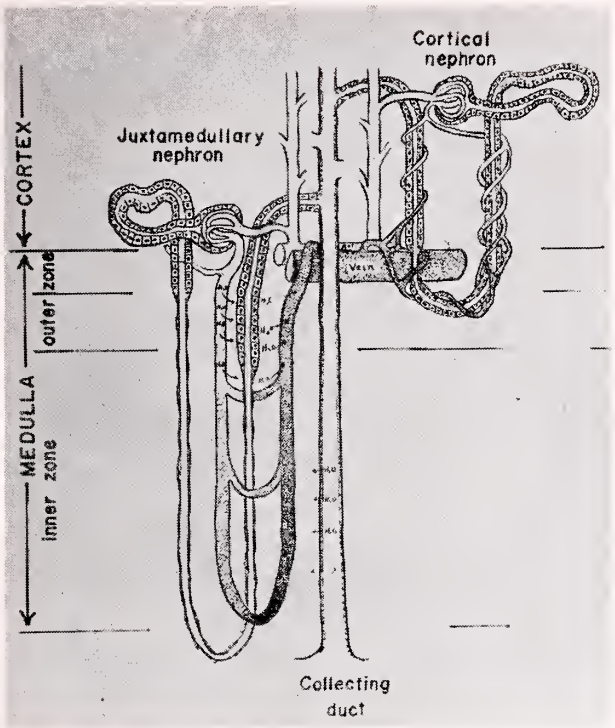


Fig. 6. The long vascular loops of the vasa recta accompanying the long loops of Henle into the medulla apparently serve as countercurrent exchangers, thus short circuiting the water in the outer medulla and reducing the effective blood flow in the inner medulla. Such a system would work efficiently in transfer of water by a hydrostatic pressure difference as described by Hargitay and Kuhn, **Z. Elektochem.** 55: 539, 1951. This may explain why the efferent arteriole of the juxtamedullary glomeruli is of large diameter.

not accumulate without limit in the medullary and papillary interstitium. Once a steady state osmolar gradient has been established along the length of Henle's loop, both sodium and water must be removed to the blood as fast as they are reabsorbed. At the same time the osmolar gradient must be maintained. An increase in medullary blood flow would tend to wash out the concentration gradient in the renal medulla.[40] While it is generally recognized that the kidneys enjoy an unusually high blood flow, this applies only to the cortex. The blood flow in the medulla is extremely low; 2 to 3 ml per 100 gm kidney per min. as compared to 320 to 350 ml per 100 gm kidney per min. in the cortex.[41, 42, 43, 44] Further blood flow to the renal cortex is autoregulated[45, 46, 47, 48] at the preglomerular arteriole[49, 50, 51, 52, 53] by renin released from the granular cells of the juxtaglomerular apparatus.[54] Renin release is in response to changes in the systemic blood pressure[55A] or to the chemical composition of the tubular fluid at the macula densa.[55] Autoregulation of cortical renal blood flow serves to autoregulate the cortical glomerular filtration rate.[45, 46, 56, 57, 58] Peculiarly, the juxtamedullary glomeruli have negligible amounts of renin[59, 60, 61] and the medullary blood flow is not autoregulated.[62] The question, then, is the mechanism by which a low blood flow is maintained in medullary vessels denied autoregulation and thus responsive to alterations in systemic arterial blood pressure. In part, this is accomplished in the kidney by using the vascular loops as countercurrent exchangers. The principle of countercurrent exchanges has been known and used for many years. Scholander,[63] in particular, has pointed out the significance of such a system in biology. As shown in figure 6, the long vascular loops of the vasa recta, accompanying the loops of Henle into the medulla, apparently serve as countercurrent exchangers, short-circuiting the water in the outer medulla and reducing the effective blood flow in the inner medulla.[64, 65] Such a countercurrent exchanger would most effectively operate with a high intravascular pressure which may explain the large diameter of the post-glomerular arteriole in the juxtamedullary nephrons.

Recently Moffat and Fourman[110] studied the vascular pattern in the rat kidney and found a distinct transition between the outer and inner medulla. They showed that juxtamedullary glomeruli may have two efferent arterioles, one passing directly into a rich capillary plexus in the outer medulla and the other descending into the medulla as the vasa recta. Our own studies show a somewhat similar arrangement in the dog.

Of importance, are the changes in vasomotor activity during infusions of epinephrine and ADH.[66, 67] Such results, together with the notation of Smith[111] of muscular efferent vessels in juxtamedullary glomeruli seem to indicate an ADH sensitive (constriction) vascular structure in the renal medulla, localized in the descending limbs of the vasa recta.

The Collecting Ducts

On embryological grounds there is reason to separate the nephron from the collecting duct. Nevertheless recent physiological studies reveal that the collecting ducts actively participate in the formation of urine. Certainly, the collecting ducts are the site of passive water reabsorption in the concentration of the urine; ADH increases the permeability of the collecting duct to water and allows water to diffuse into the hyperosmotic medullary and papillary interstitium.

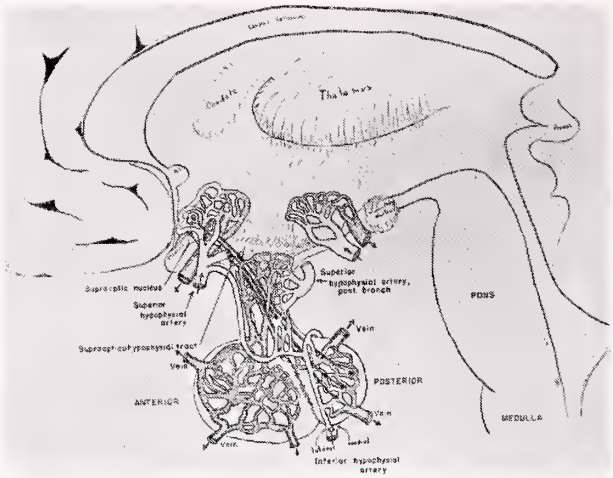


Fig. 7. The supraoptic-hypophysial tract consisting of nerve cells in the supraoptic nucleus of the hypothalamus supplied by the superior hypophyseal artery, the axons conveying the active principle (ADH) by axonal protoplasmic flow, and the capillary sinuses of the posterior pituitary to which the neurosecretory material is delivered.

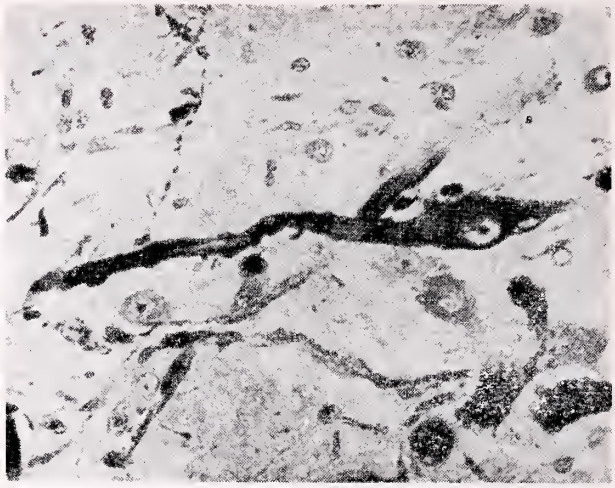


Fig. 8. Nerve cell containing neurosecretion and secretory material in the axon. From the supraoptic nucleus of a dog. Chrom-alum/hematoxylin stain. Apprx 500X. (From Bargman, W. **Endeavor** 19: 125, 1960).

It has been shown that sodium reabsorption occurs in the collecting ducts in association with chloride and in exchange for hydrogen and ammonia. In a hydrated individual, in which circulating ADH is minimal, the distal tubule and collecting duct are impermeable to water. While the rate of urine flow during maximal diuresis will approximate the rate at which proximal tubular fluid is delivered to the loop of Henle, the collecting ducts continue to reabsorb sodium further diluting the final urine. Indeed, Sonnenblick et al.[112] suggest that aldosterone aids urinary dilution by promoting reabsorption of sodium chloride virtually free of water in the distal tubule (presumably also in the collecting ducts). Final acidification of the urine occurs in the collecting ducts,[68] ammonia also is added[69] and presumably potassium secretion occurs here.

The Antidiuretic Hormone

The results of Verney, previously cited, clearly showed that the osmolar concentration of the extracellular fluid was guarded by ADH released from the posterior pituitary gland. If so, how and where is ADH produced and what controls its release?

Current data suggest that ADH is synthesized in the cells of the supraoptic nuclei of the hypothalamus and moves by axonal protoplasmic flow, via the supraoptic-hypophysial tract, to the neurohypophysis for storage and release.[71] Bargman,[72] by means of selective histological staining, has been able to trace the movement of the secretory material. The posterior lobe of the pituitary does not appear to be the site of formation of ADH, but to be a storage organ for the secretory granules. The posterior lobe releases the hormone into the blood stream when needed. The neurohypophyses of the new born are very much poorer in posterior lobe hormone than are those of the adult[73, 74] and probably explains, in part, the inability of the infant kidney to concentrate the urine. It should be mentioned that granules stainable with chrome hematoxylin are demonstrable in the supraoptic nuclei at 20 weeks of gestation in the human[113] and about one week before birth in the dog.[114] However, the material stained with chrome hematoxylin is the carrier protein and not ADH. While there is good evidence that the amount of stainable granules reflects the amount of ADH (see Hild[115]) such interpretation should be viewed with caution. For instance, increased granularity of the juxtaglomerular cells of the kidney is interpreted as increased renin secretion or release while increased granularity in the supraoptic nucleus of the hypothalamus is viewed as decreased ADH release. Of course, one is dealing with two possible reactions, release and synthesis. As expected, increased demand for ADH in dehydrated animals, caused depletion of the stainable material and parallels the depletion of extractable ADH. The structure of vasopressin has been determined and synthetically duplicated.[75] According to Archer[76] the neurosecretory material of the posterior lobe of mammals consists of a large molecule, presumably an inert protein called neurophysine, to which the physiologically active polypeptide is attached.

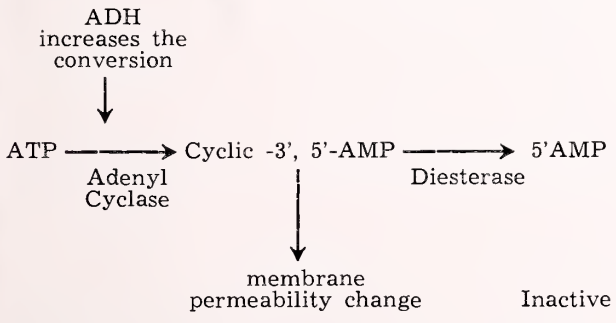
CyS . Tyr . Phe . glu(NH_2) . Asp(NH_2) . CyS . Pro . Arg . gly(NH_2)

Arginine Vasopressin

Separation of the active principle from neurophysine may be assumed to occur after release of the particle into the circulation.[77]

ADH is released in response to an increase in the osmolarity of the extracellular fluid. The osmoreceptors would appear to lie somewhere within the area of distribution of the interval carotid artery. Verney identified large vesicles in the hypothalamus of the dog which he considered as osmoreceptors. This interpretation has been questioned for these vacuolated cells occur in some species but not in others. Indeed, in the dog or rat they may occur in large numbers or be absent altogether. Electro-encephalographic technique in rabbits and cats has suggested that the osmoreceptors are situated rostral to the hypothalamus in the olfactory system.[115-118] Sundsten and Sawyer,[119] on the basis of electro-encephalographic recordings in dogs given hypertonic saline, located osmoreceptors in the olfactory bulb. Numerous factors in addition to hyperosmolarity of extracellular fluid will cause release of ADH; stress,[120] anesthetics (especially ether),[121] morphine,[122] barbiturates,[123] demerol,[124] nicotine,[125] syncope, emotion or exercise.[126]

Some attention has been given to the mechanism of action of ADH. While it is true that the hormone acts to lower the barrier to the passage of water by an increase in pore size or creating new pores, the exact way in which this is accomplished is equivocal. The view of Genetzinsky[78] that ADH stimulates the production of hyaluronidase by the renal tubule should be abandoned.[79, 80, 81] Several lines of work[82, 83, 84] suggest that ADH, by combining with -SH groups, produces a configurational change which allows increased permeability to water. Orloff and Handler[85] are of the opinion that an intracellular intermediate, adenosine - 3', 5' -monophosphate, (cyclic -3', 5'-AMP) is the agent responsible for the permeability change. They suggest that the concentration of cyclic-3', 5'-AMP is controlled by the antidiuretic hormone.



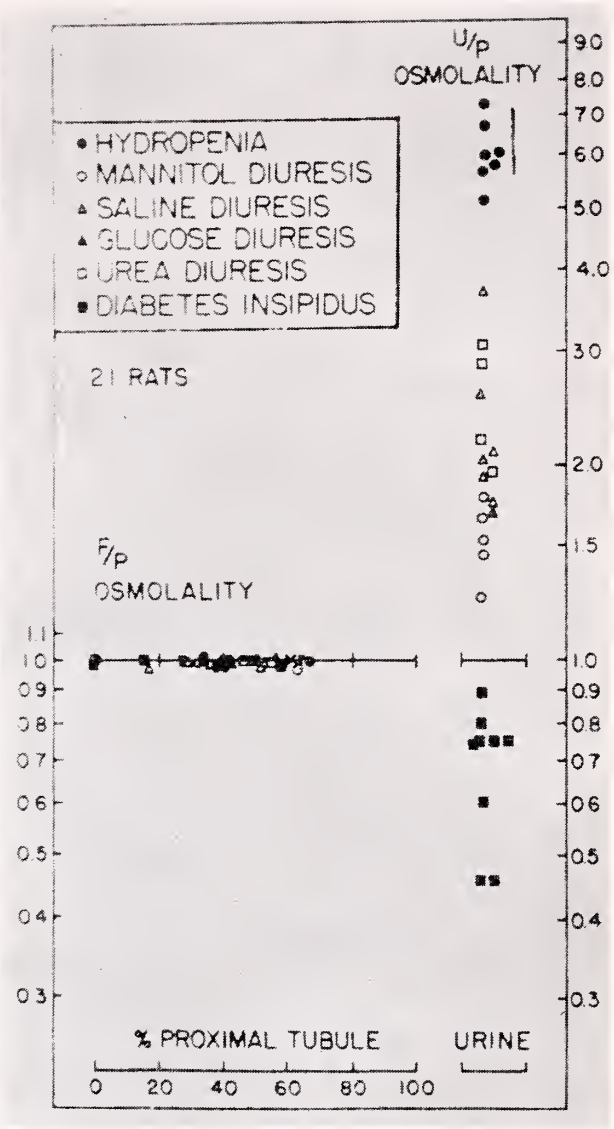


Fig. 9. Osmolality ratios of proximal tubular fluid (F/P) and urine (U/P) of rats under diuresis and antidiuresis (From Gottschalk, C. W. **The Physiologist).**

Proximal Tubular Activity

There appears to be general agreement that about two-thirds of the filtered water and sodium are reabsorbed in the proximal tubule.[86, 87] It is well established that the proximal tubular fluid remains isosmotic with plasma[88, 89] indicating that the proximal tubule reabsorbs

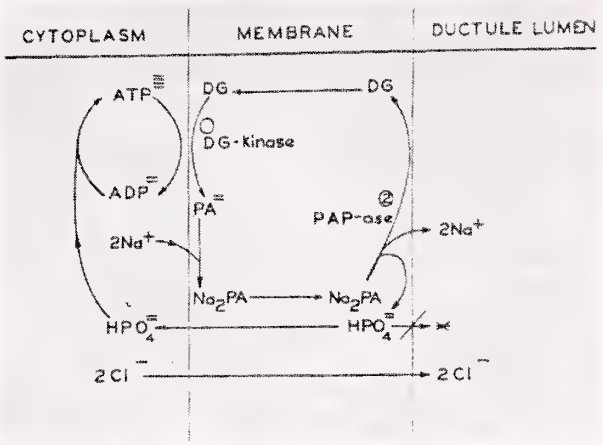


Fig. 10. In this model a PA molecule combines with two sodium ions at the cytoplasmic border of a cell membrane. Formation of such a complex generates a gradient forcing its diffusion through the membrane to the extracellular border where hydrolysis of PA by phosphatidic acid phosphatase (PAPase) released sodium into the extracellular fluid. The resulting diglyceride (DG) diffuses back to the cytoplasmic border and is converted to PA by the enzyme DG-kinase with ATP as a phosphate donor. (From Hokin and Hokin. **Laboratory Investigation** 10: 1151, 1961.)

large amounts of water and salts with the establishment of no significant concentration gradients. While water and chloride reabsorption are considered to be passive phenomena, sodium reabsorption is an active cellular process, requiring energy derived from metabolism and capable of transporting sodium against an electrical-concentration gradient. The exact nature of the sodium carrier system is unknown but Hokin and Hokin[90] developed a model in which phosphatidic acid (PA) acted as a "carrier" for sodium ions. It is generally agreed that some form of this model exists for sodium transport.

An important point in regard to sodium reabsorption is the fact that reabsorption proceeds to some 80 per cent of the filtered load, despite variations in the amount filtered at the glomerulus. Increasing the tubular sodium load results in the reabsorption of the same percentage of filtered sodium, although the net amount reabsorbed is increased.[91] The above could imply an active transport system for sodium in which the tubular transfer rate is directly controlled by the amount of sodium at the site. Such a transfer system appears to be possible. There has been discovered in crab nerve,[92] erythrocyte membrane,[93] nerve cell membrane,[94] liver cell membrane,[95] heart cell membrane[96] and in the kidney,[97] a unique magnesium activated sodium-potassium dependent, ouabain sensitive adenosinetriphosphatase which appears to be part of the system for sodium transport. In heart and kidney, addition of sodium had a marked stimulatory effect on the enzyme activity. While potassium alone did not stimulate, with low sodium, potassium was inhibitory to the heart enzyme activity. Such an enzyme system, responsible for sodium and potassium transport, whose activity is controlled by the sodium concentration, could serve to regulate sodium reabsorption in the tubule. However, the problem may not be so simple, for Giebisch and Windhager[98] and Stein et al.[99] noted that during saline loading, while sodium reabsorption in the proximal tubule remained proportional to the filtered load, there developed an inhibition of sodium reabsorption in the distal tubule (or the collecting ducts). Vander[100] recently reported that angiotensin inhibited distal tubular sodium reabsorption. It is tempting to relate the renin-angiotensin system to the direct control of tubular sodium reabsorption. There appears to be evidence for such a correlation.[101, 102] Certainly the fact that the distal tubule returns to its own glomerulus and comes in close contact with the afferent arteriole would appear to be of great functional significance. That portion of the distal nephron which contacts the afferent arteriole exhibits morphological differences and constitutes a structure termed the "macula densa." At the point where the macula densa contacts the afferent arteriole, the cells of the afferent arteriole (the juxtaglomerular cells) contain granules instead of myofibrils. The granules of the juxtaglomerular cells are considered to be the source of renin. Sodium deficiency causes an increase in the granulation (increased renin production) of the juxtaglomerular cells[103] whereas sodium administration causes a disappearance of the granules (decreased renin production).[104] While it is true that in the past the juxtaglomerular cells have been considered as baroreceptors,[105] Guyton[106] recently postulated that the osmolality of the urine at the macula densa controls renin release. In an experiment designed to test this point, Vander and Miller[107] concluded that renin secretion was indeed controlled by the flow or composition of intratubular fluid at the macula densa. In Guyton's view, low sodium at the macula densa stimulates, while high sodium inhibits, renin release. This interpretation is consistent with the observations on granulation of the juxtaglomerular cells in sodium deficiency and sodium administration. However, the view that angiotensin may be responsible

for direct inhibition of distal tubular sodium reabsorption during sodium loading would require that high sodium at the macula densa stimulates renin release. The latter is possible for, during the action of saluretic drugs in which more sodium is delivered to the macula densa, vasoconstriction and reduction of glomerular filtration rate (a reflection of renin release) has been noted.[108, 109] Thurau,[110] in a very carefully documented and lucid argument points out that it is possible that high sodium at the macula densa is responsible for renin release. The problem of the specific factors responsible for renin release demands solution before this system can be fitted into a complete scheme of control of sodium reabsorption. Perhaps both high and low sodium at the macula densa are responsible for renin release and protect the body against sodium loss by different mechanisms. Thus, it has been shown,[111] through [114] that the renin-angiotensin system regulates aldosterone secretion. This places the distal tubular sodium delivered to the macula densa in a strategic position to control sodium reabsorption indirectly through release of aldosterone. Nevertheless, Thurau[110] is of the opinion that the chemical composition of intratubular fluid at the macula densa regulates renin release which, through formation of angiotensin, affects the tone of the afferent arteriole and so controls glomerular filtration rate. The reasoning is that regulation of glomerular filtration rate regulates constancy of the filtered load of sodium delivered to the tubule and so regulates sodium reabsorption. Whatever the exact mechanism, it seems that the juxtaglomerular apparatus and the renin-angiotensin system are either directly or indirectly involved in the control of tubular sodium reabsorption.

Glucose, amino acids, potassium, phosphate, sulfate, urate and bicarbonate are actively reabsorbed in the proximal tubule. Modern techniques of paper and ion-exchange chromatography have served to clarify many problems of tubular function and dysfunction.[115] For instance, the familiar occurrence of cystine stone formation has long been recognized and it is known that individuals who form such stones excrete large amounts of cystine in the urine.[116] Unusual excretion of cystine also occurs in other genetically determined conditions (Fanconi-deToni-Debre syndrome and hepto-lenticular degeneration) in which stone formation rarely occurs. Recently, it seemed possible to distinguish true cystinuria from other cystine losing conditions on the basis of the aminoaciduria. Arrow and Westall[117] noted high clearances of the four amino acids cystine, lysine, arginine and ornithine in cystinuria whereas the plasma levels were normal.[118] When Webber, Brown and Pitts[119] reported a closely related and perhaps identical reabsorptive mechanism for cystine, lysine, arginine and ornithine, it seemed reasonable to conclude that cystinuria was an inherited defect of the single enzyme responsible for tubular reabsorption of these four structurally related amino acids. However, Rosenberg et al.[120] using **in vitro** studies of amino acid transport in rat-kidney slices, presented data showing that lysine, arginine and ornithine shared a common transport mechanism. Cystine did not share the same pathway. In a similar study on human kidney, Fox et al.[121] also showed that lysine, arginine and ornithine shared a common renal transport mechanism. Cystine did not occupy the same transport system. They further showed that in cystinuria, there was impairment of lysine and arginine reabsorption, but no defect in cystine reabsorption. These authors speculated that the abnormal cystine excretion in cystinuria was not due to defective cystine reabsorption but was due to an abnormality in cystine-cysteine interrelationship, i.e. such patients have difficulty keeping cysteine reduced. Moreover, Frimpter[122] found the mixed disulfide of cysteine and homocysteine in urine of cystinuric patients and suggested that the compound was formed in the tubule by oxidation. Recall the observations of Worthen and Good[123] that the cystine reductase of blood is reduced in patients with cystinosis. There appears to be a great similarity in the two reports.

Abnormal tubular transport may be secondary to an inborn error of metabolism.[124] Thus, in galactosemia, abnormal release of amino acids in the urine may be secondary to tubular injury resulting from accumulation of galactose-1-phosphate in renal tubular cells. The defect is a deficiency or absence of the enzyme, galactose-1-phosphate-uridyl transferase, in body fluids resulting in failure of galactose metabolism. Most infant mammals start life on a diet in which lactose is the major carbohydrate source. Normal human infants first convert lactose to glucose and galactose-1-phosphate. The enzyme galactose-1-phosphate-uridyl transferase catalyzes the reaction which permits galactose-1-phosphate to displace glucose-1-phosphate from uridinediphosphoglucose to give uridinediphos-

phogalactose. The latter is then metabolized. In cases of congenital galactosemia, the critical transferase is absent, galactose-1-phosphate accumulates and causes renal tubular defects. Incidentally, Beutler et al.[125] have developed a simple screening test for galactosemia by the coupling of galactose metabolism to methylene blue. Normal blood reduces methylene blue in 25 minutes, the blood of heterozygotes (carriers) in 50 minutes while galactosemic blood takes two hours to reduce the methylene blue.

It appears that potassium reabsorption is virtually complete in the proximal tubule, presumably in exchange for sodium.[126] Gottschalk et al.[127] have shown that hydrogen is secreted into the proximal tubule in exchange for sodium with a consequent reabsorption of bicarbonate and a fall in pH of the fluid. Hayes et al.[128] note that the proximal tubule contributes from 67 to 70 per cent of the ammonia added to the urine and Beechwoot et al.[129] say that while urate is absorbed in the proximal tubule, this portion of the tubule also secretes urate into the fluid.

The Distal Tubule

The distal tubule reabsorbs a small fraction of the filtrate (about 12 to 15 per cent) in a highly variable manner according to body needs. It is accepted that final acidification of the urine occurs in the distal tubule and collecting ducts by the exchange of hydrogen of the tubular cell for sodium in the tubular fluid.[130, 131] The sodium is then returned to the blood in combination with bicarbonate. The potassium which is excreted in the urine is that which is actively secreted in exchange for sodium by the cells of the distal tubule and collecting ducts.[132, 133] When the quantity of sodium delivered to the distal tubule is increased by sodium loading or osmotic diuresis, potassium excretion rises. When distal sodium is curtailed by reduced filtration or low sodium intake potassium excretion is reduced. The normal kidney is able to excrete relatively large loads of potassium with some rapidity. Acute oral loads of up to 200 mEq may be tolerated and potassium intoxication is difficult to induce until an acute oral load of 300 to 350 mEq has been ingested.[134] On the other hand, the kidney is relatively inefficient in potassium conservation, requiring many days to achieve a balance between intake and output when intake is reduced. The slow response results in potassium loss. The regulation of potassium excretion seems to reside primarily inside renal tubular cells and is apparently influenced to a large degree by the cellular concentration of potassium. Adrenal steroids accelerate the exchange of sodium for potassium and increase the excretion of potassium. The excretion of hydrogen and potassium have been found to vary inversely under a wide variety of conditions implying that hydrogen and potassium compete for a common transport system.[135] In potassium depletion, there appears to be an increase in the hydrogen-ion concentration inside the cells.[136] The result is an increase in cell hydrogen exchange for tubular sodium with a consequent increase in bicarbonate reabsorption (alkalosis) and fall in urine pH.

SUMMARY

Careful analyses have, without exception, confirmed the counter-current multiplier concept of urine concentration. The concept of the active transport of water has been abandoned and data indicate that water movement is secondary to the active transport of solute. Renal blood flow continues to be an enigma due to the lack of techniques for measuring intrarenal blood flow. The juxtaglomerular complex is emerging as an important regulatory organ. As a baroreceptor it exerts a homeostatic control over extracellular fluid volume by way of the angiotensin-aldosterone system. As a chemical receptor it exerts a control over glomerular filtration rate and tubular sodium reabsorption. Micropuncture techniques have effectively localized sites in the nephron where specific transfer processes occur but relatively little progress has been made in elucidating renal tubular reabsorptive and secretory processes. Histochemistry of tubular epithelium has revealed important enzyme localizations and should offer valuable information on specific lesions in certain renal diseases.

REFERENCES

1. References will be supplied by the author on request.

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BP reductions in the recumbent and sitting positions often are nearly as great as in the standing. In clinical trials, the average *recumbent* BP reduction was 36/18 mm. Hg.



The average *standing* reduction in clinical trials was 45/22 mm. Hg. Thus the difference between the standing and recumbent readings was only 9/4 mm. Hg.

Significantly lowers blood pressure in all body positions; less likelihood of orthostatic hypotension

In clinical trials, the average reduction in standing blood pressure was 45/22 mm. Hg.; in the sitting position it was 48/20 mm. Hg.; and in the recumbent position, 36/18 mm. Hg.

Because Eutron effectively reduces blood pressure in all body positions, there is reduced likelihood of orthostatic symptoms or hypotension.

This was reflected in the relatively mild character of side effects seen in clinical trials (see below).

Smooth and gradual onset

Onset of antihypertensive action is usually quite smooth. Initial reduction of systolic and diastolic readings is usually seen within a week -- maximum reduction in seven to ten days.



Less troublesome side effects may be seen; frequent improvement in "sense of well-being"

Fewer than 1% of patients studied discontinued Eutron therapy because of side effects. This is due in part to the relatively low dosage needed with the combination. Usual recommended dose is one tablet daily—that is, 25 mg. Eutonyl with 5 mg. Enduron. *This is about half the usual therapeutic dose of Eutonyl given alone.* As a consequence side effects may be milder. And, as with Eutonyl given alone, the patient may well note an increased sense of well being. This is in distinct contrast to most other antihypertensive therapy.

ABBOTT

Prescribing information for EUTRON

INDICATIONS: Eutron (pargyline hydrochloride and methyclothiazide) is indicated in the treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. It is not recommended for use in patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone.

CONTRAINDICATIONS: Eutron is contraindicated in patients with pheochromocytoma, advanced renal disease, paranoid schizophrenia and hyperthyroidism. Until further experience is gained it cannot be recommended for use in patients with malignant hypertension, children (under 12 years of age), or pregnant patients.

The concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. A drug-free interval of two weeks should separate therapy and use of these agents.

WARNINGS: Pargyline hydrochloride is a monoamine oxidase inhibitor. Patients should be warned against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When it is necessary to administer alcohol, narcotics (notably meperidine), antihistamines, anesthetics, barbiturates and other hypnotics, sedatives, tranquilizers, or caffeine, these agents can be used cautiously at a dosage of ¼ to ⅕ the usual amount. Avoid parenteral administration where possible. Withdraw pargyline two weeks before elective surgery.

Patients should be warned about the possibility of postural orthostatic hypotension. Those with angina or other evidence of coronary disease should not increase physical activity. Pargyline may lower blood sugar. Potassium depletion is unlikely at the recommended dosage, but if it occurs, adjust dosage or withdraw or provide added natural food sources of potassium; potassium tablets should be avoided wherever possible, as bleeding or obstructive ulceration of the small bowel has been associated with their use; potassium levels should be especially watched if the patient is on digitalis or steroids, or if hepatic coma is impending.

PRECAUTIONS: When determining the antihypertensive effect of Eutron, blood pressure should be measured while the patient is *standing*. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Pargyline has not been shown to cause damage to body organs or systems. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. The drug should be used with caution in patients with liver dysfunction. With prolonged therapy, examine patients for change in color perception, visual fields, and fundi.

Elevated blood urea nitrogen, serum uric acid or blood sugar are possibilities attributable to the methyclothiazide in Eutron. Methyclothiazide may also reduce arterial response to pressor amines. Blood dyscrasias, including thrombocytopemia with purpura, agranulocytosis and aplastic anemia, have been seen with thiazide drugs.

SIDE EFFECTS: The use of pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Drug fever is extremely rare. Congestive heart failure has been reported in a few patients with reduced cardiac reserve. Nocturia has been observed with the combination. If side effects persist, despite symptomatic therapy or reduction of the dose, discontinue the drug.

ABBOTT

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SKIN CANCER

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Skin cancer is a common condition in this part of the country. It is occupational, so to speak, due to excessive exposure to bright sunlight, in a rural population of predominately light complexioned ancestry. The true cause of skin cancer, as of any other cancer, is still unknown. It probably lies in the realm of biochemistry, genetics and, possibly, microbiology.

There can be, however, no doubt that chronic irritation plays a vital role in the causation of many skin cancers.

In individual cases this may be chronic mechanical irritation. For instance, from ill-fitting spectacles over the bridge of the nose or behind the ears.

Also, the development of cancer in old, chronic ulcers; old scars, especially burn scars; and in old x-ray dermatitis probably belongs to this group.

In the large majority of cases, however, chronic actinic exposure seems to be intimately involved in the origin of these malignancies. This is evidenced by the fact that the large majority of skin cancers are found on the exposed parts of the body i.e. the face, ears, back of the neck, "V" of the neck and top of the hands.

However, some other biochemical and probably genetic inherited factors must also be operating, at least in some cases. We find single and at times multiple malignancies of the skin occasionally involving the trunk and other covered, non-exposed areas. They frequently differ morphologically and histologically from the picture of the usual actinogenic malignancy of the face.

It is also a fact that in some individuals chronic ingestion of arsenic, like Asiatic pills and Fowler's solution, as it was used in the treatment of psoriasis and other disorders, may act as a carcinogen many years after this exposure. Innumerable small and large malignancies of the skin may develop on exposed and unexposed parts of the body of these individuals. In some areas where the arsenic content of the drinking water is very high, like in the province of Cordova in Argentine, skin cancer is an endemic problem.

It might be worthwhile to remember the frequency of cancer of the scrotum in chimney sweeps from the chronic irritation from soot; mulespinner cancer; skin cancer of the abdominal skin in Tibet, where people, in order to keep warm, carry a little basin filled with glowing coal on their abdomen; cancer from contact with various hydrocarbons in workers connected with the oil industry. (Tars).

Notwithstanding all that can be said about various causes of skin cancer, there is no doubt that the vast majority of cases are due to chronic actinic exposure. This leads both clinically and histologically to premature aging of the skin of the exposed areas as witnessed by wrinkling, loss of elasticity, dryness, thinning, freckling. Cancer being regarded as a degenerative process, frequently associated with aging, it is no surprise that this prematurely aged skin tends to develop premalignant and malignant lesions.

Blue-eyed, blond people, who burn easily in the sun, naturally develop these changes much more readily than people with a brunette complexion. People of Irish stock are notoriously vulnerable in that respect, and consequently develop more cancers of the skin than any other ethnic group, but blonde people of other central and north-European extraction are nearly as vulnerable.

Inasmuch as the type of complexion we have is determined by the type of complexion of our ancestors, the tendency toward skin cancer may be regarded as inherited.

What has been said about mechanical or actinic irritation leading to skin cancer also holds true with respect to cancer of the lower lip, the lip consisting of a modified type of skin. I only want to mention irritation from a snaggle tooth, the pipe stem in chronic pipe smokers, combining thermal, mechanical and chemical irritation and, naturally, actinic chronic overexposure to sunlight.

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* Presented at the Aberdeen District Medical Society Meeting.

Clinically, the first sign of change is frequently what is called a senile or actinic keratosis, single or multiple. It consists of a more or less well-defined, reddish, scaly area. If one attempts to remove the scale the lesion usually will bleed.

These lesions are premalignant and all are potentially dangerous. If the condition is extensive it is called Farmer's Skin, hinting at the origin of the condition.

Histologically, these senile keratoses will show a great deal of change in the epithelium: a lot of unrest; dyskeratosis; loss of polarity; disorientation; cellular atypy; also usually a massive, cellular infiltrate below in the dermis.

However, the dermis is not yet invaded and the worst that can be said about the condition is that it is carcinoma in situ.

Frank skin cancer may develop out of these lesions or it may develop without such precancerous lesions.

Two kinds of skin cancers are being distinguished:

a. Basal Cell Carcinoma, about 70% to 80% of the cases.
b. Squamous Cell Carcinoma, about 20% to 30% of the cases.

Lesions on top of the hands and of the lower lip are invariably squamous cell carcinomas.

Basal cell carcinoma histologically imitates the cells of the basal cell layer of the epidermis. It consists of cylindrical or oval cells with a dark staining prominent nucleus. The cells are rather uniform. They infiltrate the corium and underlying structures in sheaths, bands or solid or cystic clumps. A row of cells arranged like a row of palisades on the periphery is characteristic.

Basal cell carcinomas metastasize only in very exceptional instances but are locally destructive and, at times, are difficult to eradicate. They may grow fast or very slowly and are usually painless.

Clinically, the basal cell carcinoma usually will be in the form of a papular or nodular lesion or a little plaque, waxy, somewhat elevated. If older, the lesion may be ulcerated with a pearly border around the ulcer. It may vary in size tremendously. From very small, the size of a pin-head, it may over the years enlarge to become the size larger than the palm of a hand.

Some rare lesions will be very flat consisting of a somewhat hardened whitish area in the skin. This type is called morphea-like basal cell carcinoma. The forehead is the most common location. It is distinguished by its relative resistance to therapy. Some basal cell carcinomas contain pigment and, for this reason, are dark in color. They are not to be confused with seborrheic keratoses or melanoma. They are not more, nor less malignant than an ordinary basal cell carcinoma.

As a whole, the difficulty in treating basal cell carcinomas is that in some cases it is difficult to judge how far the lesion may extend laterally or in depth. Recurrences will occur invariably if some silent extension of the tumor is not eradicated.

Squamous cell carcinomas, on the other hand, are not only locally destructive but tend to metastasize to the regional lymph glands. Usually, they grow faster than basal cell carcinomas. They may vary histologically and clinically from fairly to highly malignant. Histologically, they imitate the cells of the epidermis above the basal cell layer i.e. the malpighian layer. However, they do show a great deal of cell atypy, depending on their degree of malignancy. They also, frequently, produce keratin (Horn Pearls).

They invade the corium and also the lymphatics and are prone to metastasize.

Clinically, they usually show a button-shaped lesion of hard consistency. As the lesion gets older, it may ulcerate and, if neglected, become infected, fungating and malodorous. Usually, it will invade and erode underlying structures faster than a basal cell carcinoma.

Occasionally, one may find, histologically, areas of both basal cell and squamous cell carcinoma in the same tumor. This is especially true of tumors of longer duration and considerable size. In such a lesion the tumor has to be regarded as malignant as its most malignant area.

The diagnosis of skin carcinomas is often self-evident on clinical grounds, especially in basal cell carcinomas. On the other hand, it is at times difficult to distinguish, clinically only, between a senile keratosis and an early malignancy. Also, the differential diagnosis between a basal and squamous cell carcinoma may, in some cases, on clinical grounds only, be difficult. Only after one has been fooled a few times in one's clinical judgment will one appreciate this. For this reason, taking a small biopsy, before instituting therapy is a wise thing to do. The result of the biopsy has a bearing on the course to follow therapeutically and, naturally, it is also of prognostic significance.

The management of skin cancer belongs:

a. To the sphere of the general practitioner as he is able to deal with many of these lesions satisfactorily with the means at his command.

b. If they belong to a specialist, they belong to the dermatologist trained in the management of these conditions.

The dermatologist has a wider range of treatment methods at his command than any other specialist and, therefore, can choose what might be best suited in an individual case ranging from surgery to electro-surgery, to radiation therapy, with x-ray or radium to microscopically controlled chemosurgical excision.

Any other specialist has to limit himself due to the nature of his training and of his specialty to one of these modalities or the other but none has this full range at his command.

What modality to choose in a particular case will depend upon the particular lesion and its location, but also on the age and general condition of the patient and, naturally, also upon the skill and familiarity of the operator with a particular method.

With respect to premalignant keratoses, they may be eradicated successfully by a multitude of simpler or more complicated methods. They may be curetted or destroyed by electrocoagulation, treated with cryotherapy with carbon dioxide or liquid nitrogen, destroyed with bichlorecetic acid or excised surgically or treated with x-ray or radium.

In very extensive cases, dermabrasion of the whole face gives very satisfactory results. This procedure does not only do away with the lesions present but makes, after healing, for a somewhat rejuvenated corium and epidermis which, thereafter, is less prone to form new lesions of this type in the future. This rejuvenation is both clinically and histologically visible.

The treatment of basal cell and of squamous cell carcinoma is essentially similar if certain factors are kept in mind:

1. As a whole, basal cell carcinomas are more responsive to radiation therapy than squamous cell carcinomas. For this reason, squamous cell carcinomas, if treated with radiation, should receive larger amounts of radiation.

2. Basal cell carcinomas do not metastasize usually but may have silent extensions, so the area treated always has to be larger than the lesion appears to be clinically.

3. Squamous cell carcinomas do metastasize. For this reason, one wants to make sure if such metastasis does or does not exist at the time of the first examination so that such metastasis may be dealt with, if necessary.

   Metastasis may develop, if not present at the time of initial therapy, months after eradication of the primary tumor. Painstaking follow-up, for this reason, is essential. Metastasis, naturally, does affect the prognosis but, frequently, may be either eradicated surgically or treated for temporary palliation with radiation. So, its presence or later appearance is not necessarily ominous.

4. Whatever method is chosen for the treatment of skin cancer, one has to keep in mind that one does deal with cancer and, for this reason, one has to be radical. Cosmetic considerations should not be ignored but are of secondary importance. One should plan treatment in such a manner that one can be reasonably sure that the condition will be eradicated at the very first instance. Recurrences are not only discouraging for the patient but make further therapy more difficult.

Enumerating the methods available for therapy of skin cancer, not necessarily in order of preference, we have:

ELECTROSURGERY — small lesions may be fulgurated or coagulated. They should be curetted, preferably afterwards, and fulgurated or coagulated again. Some operators prefer to curet first and to coagulate after curettage. They say that they can "feel" with their curette the extent of the soft cancer tissue.

Larger lesions may be excised with the electric knife. All these lesions usually granulate in well and epithelialize in a matter of three to six weeks. Even large defects usually leave very acceptable and, in the end, linear scars.

Bleeding can be nicely controlled in this method by clamping all bleeders with hemostats and connecting the coagulating current to these hemostats. However, one has to beware of secondary hemorrhage.

COLD STEEL SURGERY is applicable to small and large lesions. Small lesions may be simply excised and the defects closed. After excision of large lesions, the resulting

defect cannot be simply closed. It will require a split-thickness or full thickness skin graft. On the face, however, if there is enough relaxed skin available, even large defects can be covered with advancing or rotated or switched local flaps. With some experience, excellent functional and cosmetic results can be achieved, with relatively little hospitalization and morbidity. Cosmetically this method is far superior to skin grafts.

If the defects, however, involve large parts of the nose, ears or forehead, rebuilding by plastic surgery in stages with the help of distant flaps is very complicated, necessitating long and expensive hospitalization. Also, cosmetically, the results are not always the best.

RADIATION THERAPY is widely used with good results. However, one has to keep in mind that a surgical scar improves constantly as time goes on. A radiation scar, however, deteriorates more and more as the years go past, both from a cosmetic and functional point of view. Though this is not a hard and fast rule, radiation therapy, for these reasons, should be reserved for the older age group.

Radiation necrosis, even after careful x-ray or radium therapy, may occur even several years after therapy. It is fortunately rare but a risk one has to be aware of, especially in patients that are exposed to the hazards of the weather a lot, to sun in the summer and to the biting cold in the winter. A radiation scar always is an unstable scar.

X-ray radiation with superficial therapy machines (not deep x-ray therapy units) is excellent for the treatment of malignancies in older people. However, for best results, treatments should be given on a daily schedule giving a course of protracted, fractionated therapy, over a period of about three weeks time. This is an inconvenience both to the therapist and the patient and practically impossible if the patient lives at any distance from the place where the treatments are given. The scars after x-ray therapy are fair only at best. They are white and atrophic and sharply set off from the non-treated skin as the area surrounding the treated area has to be shielded. They do not blend in at all. Also, even with superficial x-ray equipment, there is more radiation than desirable delivered to the underlying structures with resulting, undesirable, excessive atrophy and damage to the vascular apparatus. It is just not possible to make the radiation fall off fast enough in the tissues, and to confine it to the top 1 cm.

RADIUM THERAPY equally gives excellent results. Radium may be used:

In the form of plaques made up of heavily filtered radium tubes at a distance of a few millimeters from the skin. It is equally as effective as x-rays but has the advantage that due to the close proximity of the source of radiation to the skin, the radiation falls off much faster in the tissues than with x-rays. This results in much less atrophy of the deeper structures. Also, the scar blends in much better with the rest of the skin.

By necessity, these treatments are time-consuming, taking hours, as the amount of radiation delivered per hour is comparatively small.

Both x-ray and radium plaque treatments are an ambulatory procedure and, of course, entirely painless.

INTERSTITIAL RADIUM THERAPY with low intensity radium needles gives superior results in most malignancies of the skin and lower lip, even in advanced cases and difficult locations like on the nose, the eyelids and the ears.

These needles are being inserted, in most cases, in local anesthesia in a predetermined pattern right into the carcinoma and are left in place for about one week. Usually, the procedure is ambulatory.

The advantage of this method over other methods is that the source of radiation with the highest intensity of radiation is right in the cancer, there where one wants to have it.

The intensity of radiation falls off toward the normal tissues which one wants to save.

Also, using small amounts of radium (low intensity radium needles) over a prolonged period of time (about 7 days) exposes the cancer to constant bombardment with the radiation, exposing cancer cells to the radiation at the time of mitosis when they may be most sensitive to this radiation. At the same time, due to the low intensity of the radiation and its protracted character over seven days, the normal tissues are being saved more than with any other method of radiation. They recover better usually, resulting in a much better scar.

Even the cartilage of the nose and ears

(Continued on Page 43)

IMPLANTATION OF A PACEMAKER WITH A CATHETER ELECTRODE

D. Max Reade, M.D.
Medical Clinic
Yankton, South Dakota

Electrical pacing of the heart by self-contained, implanted pacemaker has been effective in the management of atrioventricular block and in frequent Stokes-Adams seizures in which the block cannot be controlled by drugs such as Isoproterenal or Epinephrine.[1-2]

The routine, long term, self-contained pacemaker involves a thoracotomy and the implantation of the electrodes into the myocardium. Several series of these cases have been reported with good results in a high percentage of the cases.[2-3-4]

Several permanent pacemaking systems have been described and discussed in the past few years with some attention being called to the catheter electrode.[5] In the past, the use of the catheter electrode has been limited to emergency or temporary pacemaking. In using the catheter electrode in these instances, the open system is used whereby the pacemaking device is located externally. This open system poses the constant threat of infection and bacteremia. Risk of infection in transvenous pacing can largely be obviated if the proximal portion of the catheter and the pulse generator remain subcutaneous. This has been employed relatively frequently in Europe.[5] There are obvious advantages in this method when treating severely ill, aged or debilitated patients in whom anesthesia and thoracotomy would be a definite hazard.[5]

The following case describes an indication for the use of a transvenous pacemaker, its implantation and subsequent results:

This 80 year old, white woman was admitted to the hospital complaining of a constant cough, dyspnea, weakness and blackouts. She had been hospitalized three months earlier with a complete heart block and cardiac decompensation. At that time she was treated with rest, digitoxin, diuretics and a low salt diet. Her pulse had been ranging from 40-45 beats-per-minute and the rate did not change with the use of medications. The patient gradually deteriorated to the condition in which she was re-admitted to the hospital. At this time she was found to be in marked cardiac decompensation with a complete heart block. Figures I and II illustrate the ECG and chest x-ray on the second admission.

The patient was placed at complete bed rest, given digitoxin, diuretics and a low salt diet. There was some improvement in the pulmonary edema but the patient started having episodes of syncope even at bed rest. These episodes increased in frequency and the patient complained of dizziness and blurred vision on trying to rise up in bed. The pulse rate ranged between 35-40 beats-per-minute despite medications. She had periods of asystoles lasting between five and eight seconds. The patient remained decompensated notwithstanding intensive treatment.

Although the patient seemed an obvious candidate

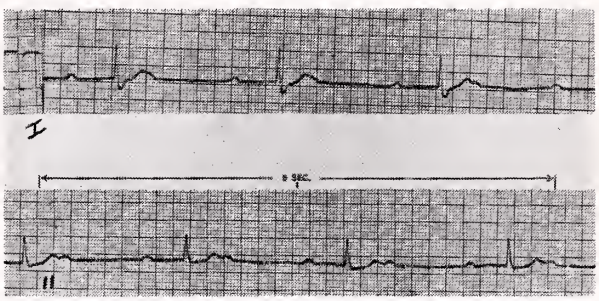


Fig. I. Leads I and II demonstrating atrioventricular block prior to implantation of the pulse generator.



Fig. II. Chest X-Ray prior to implantation of the pulse generator demonstrating cardiac enlargement and pulmonary edema.

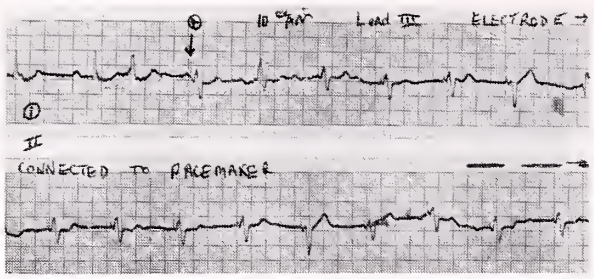


Fig. III. Lead III showing the pulse generator being connected at point A. Following this, each QRS is preceded by an impulse from the pulse generator.

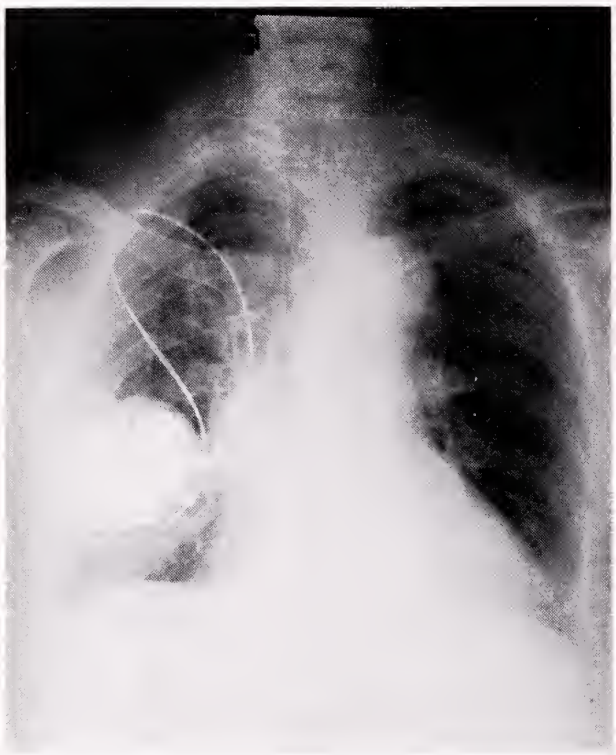


Fig. IV. Chest X-Ray one week following implantation of the catheter electrode and pulse generator, showing improvement in the cardiac decompensation seen in Figure II.

for an electric pacemaker, she was considered too poor a risk for a standard implantation employing a thoracotomy and a general anesthetic. With this in mind, a pacemaker was installed using a catheter electrode.

Under local anesthetic a catheter type electrode was introduced into the right external jugular vein and with the aid of fluoroscopy, the tip was guided into the apex of the right ventricle. On attaching the electrode to the pulse generator, the heart assumed a rate of 72 beats-per-minute, which had been preset in the pulse generator. (See Figure III). The electrode and the pacemaker were then implanted subcutaneously under the skin over the right pectoralis muscles with the use of local anesthetic. The patient tolerated the procedure well and experienced no discomfort except for the infiltration of the local anesthetic.

The patient's ECG was monitored throughout the procedure with the use of an oscilloscope. She was also attached to an external pacemaker via the chest leads which were monitoring the ECG. Resuscitation and defibrillation equipment was also available; however, the patient experienced no difficulties and this equipment was not used.

The patient showed progressive improvement and was ambulated the second post-operative day. One week following the installation of the pacemaker the patient was up and about, caring for herself with no evidence of decompensation, syncope, weakness, dizziness or blurred vision. Figure IV indicates the patient's chest x-ray one week following the implantation procedure.

The patient was discharged from the hospital two weeks after the surgery and has been followed in the office since that time. She has regained her strength and is able to care for herself and perform her regular housework.

To date, the patient has demonstrated no evidence of cardiac decompensation and has had no syncope or dizziness. The wound is well healed and has given her no discomfort. She is being maintained on digitoxin and diuretics, along with a low salt diet.

Discussion:

In the standard implantation of a pacemaker with a thoracotomy and a general anesthetic, there is general agreement that a means of pacemaking must be provided during the induction anesthesia and the initial stages of the operative procedure until the heart is exposed and the direct stimulation can be applied. The use of the catheter electrode as a means of temporarily pacing the heart is now routine and universally accepted.[2-5]

It would appear now that there are other advantages in the use of the catheter electrode. It can be employed as an emergency pacemaker when it is impractical to install an implanted myocardial electrode, due to the patient's condition or inability to be transported to a center where the procedure could be performed.

The use of the pacemaker in the past has been limited to the larger medical centers with the equipment and personnel needed to install them. To achieve the benefit of a pacemaker, a patient would, by necessity, have to be both in condition to be transported to the center and also be able to tolerate the procedure. With the use of the catheter electrode, a new approach to cardiac emergencies is now open to the smaller hospital and to the patient who finds himself there as an emergency cardiac.

The catheter electrode not only offers an emergency procedure which can be used temporarily until more definitive measures can be carried out, but also this device may be used as a permanent procedure as it is now being used in Europe.[4] It needs further study in the United States before it is used as a routine permanent installation.

The patient in the case herewith presented is doing well with the catheter method of pacemaking. Should the patient need further pacemaking with implanted myocardial electrodes, she is now in condition to be considered a good risk.

(Continued on Page 43)

COUNCIL MEETING MINUTES

October 10, 1965
Huron, South Dakota

The meeting was called to order at 11:00 a.m. by Mr. Richard Erickson, executive secretary, in the absence of the Chairman of the Council. Present for roll call were Drs. Paul Hohm, Preston Brogdon, John Stransky, A. P. Reding, Robert Hayes, James P. Steele, E. J. Perry, M. C. Tank, A. J. Tieszen, Fred Leigh, Harvard Lewis, E. T. Lietzke, Clark Johnson, E. P. Sweet. Also present were Commission Chairmen Drs. M. R. Cosand, C. L. Vogele, and G. W. Knabe.

Dr. Perry moved that Dr. Paul Hohm serve as Chairman pro-tem of the Council. The motion was seconded by Dr. Leigh and carried.

Dr. Leigh moved that the minutes of the previous meeting not be read, inasmuch as they have been published in the Journal of Medicine. The motion was seconded by Dr. Tank and carried.

Mr. Erickson reported on the donation to "South Dakota, Chile." A check in the amount of $1,500.00 was presented by Dr. Hohm to the Chilean ambassador in June.

Mr. Erickson reported on the first Orientation Program which had been held that morning for new physicians in the State. Seven doctors attended the meeting.

Dr. James P. Steele reported on the South Dakota Health Research Institute which has now been incorporated in South Dakota. An attorney and accountant have been engaged. No action was taken on this progress report.

The 1965 Relative Value Study was distributed to the Council members. Dr. Hayes spoke on negotiating the new study with the Welfare Department regarding OAA and MAA. Dr. Steele moved that $5.30 be designated as the dollar co-efficient on the new Relative Value Study and that the Executive Committee be authorized to negotiate this figure with the Welfare Department for the OAA and MAA programs. The motion was seconded by Dr. Tank and carried.

Mr. Erickson discussed a proposed change in the Medical Association's group Blue Shield-Blue Cross Plan, which would change the contract from Plan #1 to Plan #3. Dr. Leigh moved that the change be made at the next re-opening date. The motion was seconded by Dr. Reding and carried.

Mr. Erickson discussed the change which has been made in the South Dakota Medical School Endowment Association, through the new Articles of Incorporation and Bylaws. All directors for the Endowment Association will now be appointed by the Council. No action was taken.

Consideration was given to the selection of speakers at the annual meeting. Dr. Perry moved that Senator Mundt and Senator McGovern be invited to appear on the program. The motion was seconded by Dr. Brogdon and carried.

Council members were reminded to have nominations for the Distinguished Service Award and Community Service Award ready for presentation at the January Council meeting.

A discussion was held on the request of the Physicians and Surgeons Underwriters Insurance Company to advertise in the **South Dakota Journal of Medicine.** Dr. Stransky moved that the Journal not accept the advertising from the Physicians & Surgeons Underwriters Insurance Company. The motion was seconded by Dr. Tank and carried.

A letter from the Basic Science Board concerning reappointment to the Board of Basic Science Examiners was considered. Dr. Brogdon moved that the State Medical Association recommend Dr. Walter L. Hard for re-appointment to the Basic Science Board. The motion was seconded by Dr. Tank and carried.

A letter from the Northern Association for Medical Education was discussed. Mr. Erickson was directed to answer the letter indicating that no public money is available for their purposes; that they be encouraged to solicit funds on a private basis; and that the Medical Association would be happy to meet with them to discuss their project.

The Council discussed the AMA's stand on chiropractic. Dr. Reding spoke on the work of the Interprofessional Health Council in South Dakota. Mr. Dallas Whaley, AMA Field Representative, spoke on the national scene regarding chiropractic. Dr. Leigh moved that the Medical Association take no action to implement the AMA's move against chiropractic; that we preserve the "Status Quo" in South Dakota; that the Interprofessional Health Council attempt to work out the problem so there will be a change in the law that will stop the recent opinion of the Attorney General from implementation; and that Dr. Reding be asked to make a report at the January Council Meeting. Dr. Steele moved that the motion be tabled until the January Council Meeting and a report be obtained from the Interprofessional Health Council. The motion was seconded by Dr. Hayes and carried.

The Council considered a proposal to allow physicians in South Dakota to sign their notes from the Building Fund over to the South Dakota Medical School Endowment Association, if they so desire. Dr. Lietzke moved that this procedure be made available to those doctors in South Dakota who wish to do so. The motion was seconded by Dr. Leigh and carried.

Dr. Stransky moved that the January Council meeting be held on January 9, in Huron, South Dakota. The motion was seconded by Dr. Tank and carried.

Donations to local charities were discussed. Dr. Steele moved that the South Dakota State Medical Association, as an organization, donate no money to any local charities of any kind. The motion was seconded by Dr. Perry and carried.

Dr. Steele gave a presentation, on behalf of Dr. L. G. Behan, superintendent of Yankton State Hospital, requesting that the State Medical Association support the request of the State Hospital for additional appropriations at the next session of the Legislature to bring the salary scale more into line with that of other states. No action was taken.

The executive office was directed to schedule future Council meetings at various locations around the State, rather than confine the meetings to one community.

Dr. Hohm discussed the possibility of appointing a special committee to assist the American Academy of General Practice and the American Psychiatric Association in stimulating interest among South Dakota physicians in psychiatry in general practice. Dr. Johnson moved that the Council endorse the proposal. The motion was seconded by Dr. Tank and carried. Dr. Hohm then appointed Dr. A. P. Reding, representing the State Medical Association, as temporary chairman; Dr. E. T. Lietzke, representing the American Academy of General Practice, South Dakota Chapter; Dr. G. W. Knabe, representing the medical school; Dr. Richard Leander, representing the American Psychiatric Association; and Dr. L. G. Behan, representing the State Hospital.

The proposed Articles of Incorporation and Bylaws of the Seventh District Medical Society were submitted to the Council for approval. Dr. Stransky moved that the proposed Articles of Incorporation and the Bylaws be submitted to the attorney for the Association and the appropriate Commission for study and that a report be made at the next Council meeting. Dr. Steele seconded the motion and it was carried.

The Council considered a request from the South Dakota Woman's Auxiliary to sponsor the 1966 AAPS Essay Contest. Dr. Reding moved that the State Medical Association not sponsor the contest. The motion was seconded by Dr. Stransky and carried.

The Council then considered the Report of the Reference Committee on Legislation and Public Relations as Amended and Adopted by the House of Delegates of the American Medical Association at the special meeting on October 2 and 3. Dr. Reding discussed the special meeting in detail. It was agreed that a special Council meeting will probably have to be called to consider the "Medicare" regulations

when they have been formulated.

Dr. Steele presented a resolution to the Council from the South Dakota Radiological Society:

9 October 1965

The South Dakota Radiological Society meeting in Huron, South Dakota, on this date adopted the following policy in accordance with the American College of Radiology statement of policy dated 1 October 1965. This action of the American College of Radiology has been affirmed and supported by the American Medical Association.

1. It is the policy of the American College of Radiology that the members of the College shall separate their professional fees from hospital charges and present their own bills to all patients expected to pay for services.
2. Because the Congress established in the medicare law, PL98-97, provisions covering radiology solely as a medical service, and in response to the College's urgent request and that of the American Medical Association, radiologists have an obligation to make that portion of the program work as written.
3. In establishing a separate billing procedure, radiologists should set their fees according to the worth of their professional service, but must guard against abuses which would significantly increase the cost of patients or their insurers.
4. The radiologist shall not use a hospital as a billing agent. The radiologist may not ethically agree to pool his professional collections with hospital receipts. Exceptions to this recommendation are hospital based radiologists in group practice such as in a university medical school, in which all types of full time physicians practicing in a hospital voluntarily and mutually agree on a different arrangement. He may accept a salary from a hospital for administration, teaching or research, or the care of non-paying patients.
5. Radiologists will need to enlist the aid of local medical organizations and explain their intent and reasons to insurance carriers and hospital boards to gain acceptance of separate billing.
6. Appointment of radiologists to a hospital staff should be based upon the same criteria of personal competence and need for service as used for other members of the medical staff.
7. Much tact, determination and patience will be required to bring about acceptance of separate billing by hospitals. However, the obligation of current physicians to preserve the status of the specialty within medicine makes the effort imperative.

The South Dakota Radiological Society respectfully asks the Council of the South Dakota State Medical Association to adopt the following resolution in support of this policy and asks the support, advice and help of the South Dakota State Medical Association in implementation of the above policy.

Be it resolved - - - - That as soon as feasible physicians having salary or percentage arrangements (except as noted in #4 above) with hospitals shall assume a fee for service basis submitting bills to patients entirely separate from hospital bills.

He asked that the State Medical Association support the Radiological Society in their stand and that the executive committees of the State Hospital Association and State Medical Association meet to discuss how to work out the procedures to follow in the various hospitals.

Dr. Hayes moved that the Council accept the resolution as presented and take all possible means to support it, setting July 1, 1966, as a target date for terminating contracts. The motion was seconded by Dr. Johnson and carried.

The Council considered the report of the Commission on Medical Service:

John B. Gregg, M.D.
318 - D West 18th Street
Sioux Falls, South Dakota
September 13, 1965

REPORT OF THE COMMISSION ON MEDICAL SERVICE OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

The Commission met at Rapid City on Saturday, August 7, 1965. A copy of the minutes of this meeting has already been made available to each member of the Council.

Subsequent to the August 7th meeting, a letter was sent to each member of the Seventh District Medical Society regarding the Resolution of this Society which concerned the Blue Shield of South Dakota, inviting their attention to the matter at their September meeting. The matter was discussed by the Executive Committee of the Seventh District Society on August 30, 1965, and presented to the Society at its regular meeting on September 7th. It was the unanimous vote of the Society that the Resolution be withdrawn and that the matter be deferred for the present.

On August 14, 1965, the Medical School Endowment Fund Committee of the Commission on Medical Service, met at Sioux Falls and adopted the revised Articles of Incorporation of the Endowment Fund. This now becomes an independent corporation and separate from the Medical School Affairs Committee of the Commission on Medical Service. The Board of Directors of the Medical School Endowment Fund will, in the future, be appointed by the Council of the State Medical Association "at the first meeting of each calendar year of the Council and Directors so named shall take office on the first day of the Annual Meeting of The South Dakota State Medical Association." The present directors of the corporation are: F. R. Williams, M.D.; T. H. Willcockson, M.D.; R. C. Jahraus, M.D.; J. A. Anderson, M.D.; G. E. Tracy, M.D.; Warren Jones, M.D.; and E. T. Lietzke, M.D.

Respectfully submitted,
J. B. Gregg, M.D., Chairman
Commission on Medical Service

MINUTES
Commission on Medical Service
Sheraton-Johnson Hotel, Rapid City
August 7, 1965

The meeting was called to order at 2:00 p.m. in the Jade Room. Members in attendance were Drs. Jahraus, Tracy, Stransky, and Gregg. Also in attendance was Dean Walter Hard of the School of Medicine of the University of South Dakota. Excused absences were submitted by Drs. Amundson, Jones, J. A. Anderson, F. R. Williams, H. P. Adams, and Willcockson.

After the meeting was opened the floor was turned over to Dr. R. Jahraus, Chairman of the Medical School Advisory Committee. Dean Walter Hard discussed the subject of possible enlargement of the Medical School. He stated that there now are available to the Medical School, funds in the sum of $400,000.00 which must be matched by State funds. These funds are needed to complete an addition to the Medical School which will enable the school to function effectively. At the present time there is a very marked lack of laboratory and lecture room facilities. Dean Hard requested the support of the South Dakota State Medical Association in this matter in that the matter should be brought to the attention of the Board of Regents so that it may be recommended to the State Legislature at its next meeting.

The matter was discussed by the Members of the Commission.

The subject of salaries for the Members of the faculty of the Medical School and the lack of retirement programs and other benefits which might stimulate them to remain in the school was also discussed. As of the present moment the Retirement Program is inadequate.

It was announced that there will be a meeting of the Medical School Endowment Committee one week

from today. One of the main matters to be considered by this Committee is the adoption of the revised By-Laws Rules and Regulations. If these are adopted the Medical School Endowment Committee will be divorced from the Medical School Affairs Committee and be self-perpetuating.

It was announced by Dr. Tracy that about $3,000.00 was realized by the Campaign to increase the funds of the Medical School Endowment Fund at the recent State Medical meeting.

RECOMMENDATIONS:

The Committee recommends to the Council of the South Dakota State Medical Association that a special presentation be made to the Regents of Education in the State of South Dakota to support a request for matching funds for building proposal that would relieve the present shortages at the Medical School. Recognizing that the Medical School has lost faculty as result of insufficient salary and fringe benefits it is also recommended that the Board of Regents implement an adequate retirement system and salary raise for support of the Medical School.

RURAL HEALTH:

There will be a meeting held in Colorado Springs in March 1966 to which one member of the Committee will go.

INSURANCE COMMITTEE:

The subject of the resolution of the 7th District Medical Society regarding possible abolition of Blue Shield which had been forwarded to the Commission on Medical Service was discussed. It was the feeling of the Commission, in view of the fact that the resolution was unclear, nebulous and did not allow for Commission action at the present time, it should be referred back to the 7th District Medical Society for clarification or disposition.

There being no further business the meeting was adjourned.

J. B. Gregg, M.D., Chairman
Commission on Medical Service

Dr. Brogdon moved that the report be accepted. The motion was seconded by Dr. Stransky and carried. Dr. Stransky moved that the Medical Association accept the recommendation to support the request of the Medical School to the Board of Regents for additional appropriations. The motion was seconded by Dr. Steele and carried.

The Council considered the report of the Commission on Internal Affairs:

MEETING OF COMMISSION ON INTERNAL AFFAIRS

Saturday, September 11, 1965
Medical Association Building
Sioux Falls, South Dakota

The meeting was called to order at 10:00 a.m. by Dr. D. L. Scheller, Chairman of the Commission. Present for roll call were the following members: Drs. H. L. Saylor, J. H. Stensrud, William Hanson, J. C. Hagin, A. P. Reding, C. Rodney Stoltz, and C. E. Tesar.

A discussion of the resolution from the Seventh District Medical Society concerning the elimination of the Councilors as voting members of the House of Delegates, and the resolution from the Black Hills District Medical Society concerning the elimination of the House of Delegates and enlarging the Council was held. Dr. Hagin suggested that in the future the Delegates Handbook be furnished to the Secretary of each District at least thirty days prior to the annual meeting so each District may have a meeting to discuss the business to be considered at the House of Delegates meeting.

Dr. Stoltz moved that the Commission recommend to the House of Delegates that Resolution #4, is not in the best interests of the Association because it potentially concentrates too much power in the hands of too few people and, therefore, should not be favorably considered. The motion was seconded by Dr. Hagin and carried.

Dr. Hagin moved that this Commission recommend to the House of Delegates that Resolution #3, submitted by the Seventh District Medical Society be acted on favorably, excluding not only the Councilors but also the officers of the State Association as voting members of the House of Delegates unless they are specifically elected by their District Medical Societies as a delegate or alternate delegate. It is further recommended that only delegates or alternate delegates certified in writing by the Secretary of the District Medical Society and accepted by the Committee on Credentials be seated at the sessions of the House. The motion was seconded by Dr. Stensrud and carried.

Dr. Saylor moved that the Commission recommend that the Speaker of the House of Delegates appoint all Reference Committees of the House of Delegates and notify the appointees in writing not less than thirty days prior to the date of the annual meeting. The motion was seconded by Dr. Stoltz and carried.

Dr. Stoltz moved that the Commission further recommend to the House of Delegates that in order to implement the recommendation regarding Resolution #3, submitted by the Seventh District Medical Society, that the By-Laws be changed by eliminating that portion of Article 6, Section 2 on "Composition" starting with "and, (2)" deleting the remainder of this section, which will then read:

Section 2. Composition

The House of Delegates shall be composed of (1) delegates elected by the component societies, each component society being entitled to elect one delegate for each 20 active and life members in good standing, or fraction thereof, who enjoy all the rights and privileges of memberships, provided each component society shall be entitled to elect at least one delegate. The motion was seconded by Dr. Hanson and carried.

The Commission discussed the proposed publication of a statement on Medical Ethics. Dr. Hagin suggested the information be sent to every doctor in the State, rather than just the members of the Association. Dr. Saylor moved that the Commission approve the statement as presented for distribution to the physicians in the State, unless Dr. Scheller has changes to make after attending the national meeting on ethics to be held in Chicago in October. If any changes are suggested, such changes are to be approved by the Commission. The motion was seconded by Dr. Stoltz and carried.

The Commission then considered the feasibility of a central billing system for State and Local dues through the Association office. Dr. Saylor moved that until the feasibility of this project is demonstrated through better facilities, central billing not be done through the Association office and that dues collections be left to the various District Medical Societies. The motion was seconded by Dr. Reding and carried.

The Commission went over the financial report for the month of August. Dr. Reding moved that the Commission accept the financial statement as presented. The motion was seconded by Dr. Hagin and carried.

The meeting adjourned at 12:10 p.m.

Dr. Reding moved that the Council accept the report. The motion was seconded by Dr. Tank and carried.

The Council considered the report of the Commission on Legislation and Governmental Relations:

MINUTES OF MEETING OF COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

Saturday, September 11, 1965
Medical Association Building
Sioux Falls, South Dakota

The meeting was called to order at 1:45 p.m. by Robert H. Quinn, M.D., Chairman of the Commission. Members present for roll call were Drs. W. R. J. Kilpatrick, James Reagan, Bill Church, R. J. Foley, Russell Orr, G. Robert Bartron, and R. W. Honke. Also present were Drs. A. P. Reding, J. C. Hagin, J. B.

Gregg, C. E. Tesar, and E. C. Hanisch; Mr. Dallas Whaley, Mr. Randall Tuffs, and Mr. Warren May.

A discussion was held on a proposed bill dealing with the regulation of the sale of hearing aids. Dr. Church moved that we refer the bill to the Committee on Conservation of Hearing for further study and recommendations, and that Mr. Roland be informed that this action has been taken and a definite recommendation regarding the position of the Medical Association will be given at a later date. The motion was seconded by Dr. Reagan and carried.

Dr. E. C. Hanisch discussed the resolutions proposed by the South Dakota Society of Obstetrics and Gynecology regarding suggested legislation. Dr. Bartron moved that the Medical Association defer action on all the proposals at this time. The motion was seconded by Dr. Foley and carried.

Mr. Tuffs reported on the results of a survey of the Commission regarding proposed changes in the birth certificate used in South Dakota at the present time. No action was taken.

The Commission discussed the ruling of the Attorney General concerning chiropractors practicing in county hospitals. It was suggested that Dr. Reding check the situation through the Interprofessional Health Council. Dr. Church moved that Warren May be instructed to draft the various proposals for a bill to be introduced; that Mr. Erickson contact the Hospital Association officials with the idea of having a joint meeting to attempt to formulate a bill to present to the Legislature. The motion was seconded by Dr. Foley and carried. It was suggested that the proposed bill be sent to each member of the Commission for comment.

The Commission discussed the feasibility of a law concerning compulsory immunization. Dr. Kilpatrick moved that the commission go on record as being opposed to any legislation for compulsory immunization. Dr. Reagan seconded the motion and it was carried.

The Commission considered the advisability of introducing legislation providing immunity of hospital staff officers in the performance of their duties. Dr. Bartron moved that the Commission recommend adoption of this law at the next session of the legislature. Dr. Foley seconded the motion and it was carried. Mr. Warren May was instructed to draft the proposed law.

Mr. Erickson explained the steps which have been taken to attempt to set up a uniform method of payment for county patients in the State. No action was taken.

The Commission determined that no legislation should be introduced concerning the suicide laws at this time, pending the outcome of the study now being made of the mental health laws.

The meeting adjourned at 5:30 p.m.

Dr. Tank moved that the report be accepted with the exception of the recommendation concerning compulsory immunization. The motion failed for lack of a second. Dr. Leigh moved that the Council accept the report as submitted. Dr. Johnson seconded the motion and it was carried.

The Council considered the report of the Commission on Liaison with Allied Organizations:

MEETING OF THE LIAISON COMMITTEE BETWEEN THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION AND SOUTH DAKOTA PHARMACEUTICAL ASSOCIATION

Sioux Falls, South Dakota

Saturday, July 10, 1965

Medical Association Building

The meeting was called to order at 1:30 p.m. by Mr. Richard C. Erickson, Executive Secretary of the South Dakota State Medical Association. Representing the Medical Association were Drs. R. H. Quinn, M. R. Cosand, and V. V. Volin. Representing the Pharmaceutical Association were Phil Von Fischer, Tom Mills, Vere Larson, and Stan Petrick. Also present was Mr. Harold Schuler, Executive Secretary of the Pharmaceutical Association.

Mr. Erickson discussed the resolution passed by the Pharmaceutical Association, and the purpose of the meeting which is to discuss the whole area and to come up with conclusions concerning the problem prior to the legislative session.

Mr. Mills discussed the background of the problems which resulted in the resolution. He stated that the Pharmaceutical Association has no wholesale complaints, but that there are one or two areas in the State which are the basis for the dispute. He stated that the main problems are as follows:

1. The fact that the Pharmaceutical Association is concerned with the regulation of drugs and the dispensing of the drugs to the public; that drugs are being handed out by office help in the doctor's offices without a prescription.
2. The dispensing of illegal drugs such as amphetamines. The pharmacists want more control in the drug field. Nurses should not give patients drugs in the absence of the doctor.
3. Federal legend drugs must be dispensed only by a pharmacist or a doctor. Federal Law is violated if these drugs are given by a nurse or office help.

The main problem is people dispensing drugs who are not authorized to do so.

Mr. Mills stated that the Pharmaceutical Association does not want Federal control. He stated that he hoped the two Associations could handle the situation and not need State control, or go to the Legislature for a law. He requested that the Interprofessional Committee find answers to these problems. He stated that 75 to 80% of the physicians are ethical in these matters. However, he felt the problem areas would spread unless some action is taken. It was brought out that, by law, pharmacists cannot allow anyone but a pharmacist behind the counter in a drug store. Nurses are not allowed to fill prescriptions as an agent of the doctor.

A general discussion of all the aspects of the problem was held. Dr. Quinn read the rulings of the AMA Judicial Council concerning dispensing of drugs and ownership of pharmacies. It was mentioned that Iowa and New York, and Texas have established interprofessional codes between the pharmacists and physicians.

Mr. Erickson suggested that a series of three letters be prepared by our attorney which will be mailed to all physicians and pharmacists in the State. The first letter would state the problem exists. The second would explain the law and what it entitles the doctor and pharmacist to do. The third letter would be a review of the first two letters and would go into what can come in the future if both the pharmacists and physicians do not work to solve the problem together.

It was suggested that individually typed letters be used and that the committee review them for approval before they are sent out.

Dr. Cosand suggested that the problems that arise in the future might best be handled on a local or district level, so they may be settled before a problem of major proportions develops.

Authorization of the Committee was given to Mr. Erickson and Mr. Schuler to work up the letters, together with the attorney.

The Committee requested copies of the Texas and Iowa Interprofessional Codes for the information of the members, and so that they may be used as guide lines in setting up such a code in South Dakota.

Dr. Volin stated that the Liaison Committee will have to be the force behind the letters, if results are to be obtained. It was decided that three months after the last letter is mailed out, another meeting of the Liaison Committee will be held to discuss individual cases of dispute which will then have to be handled separately.

It was suggested that the letters could be signed by the attorney or perhaps by Dr. Cosand, as Chair-

man of the Commission on Liaison with Allied Organizations.

The meeting was adjourned at 3:00 p.m.

Dr. Cosand discussed the meeting which was held with representatives of the Pharmaceutical Association. Dr. Tank moved that the report be accepted by the Council. The motion was seconded by Dr. Reding and carried.

The Council considered the Report of the Commission on Scientific Medicine:

REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE

September 14, 1965

1. **Commission Meeting** was held at the Sheraton-Johnson Hotel, Rapid City, at 6:00 p.m. on August 5, 1965. Present were Drs. J. T. Elston, N. deDianous, Jr.; R. S. Jones, R. K. Johnson, G. W. Knabe, and Mr. R. C. Erickson and Mr. R. R. Tuffs. The tuberculosis control program was discussed. Plans were elaborated for the annual scientific meeting.

2. **Tuberculosis Control Program:** A communication is being sent Dr. G. J. Van Heuvelen, State Health Officer, offering the Medical Association's recommendations for further implementation of the South Dakota Tuberculosis Control and Treatment Law of 1963. These include the designation of Sioux Valley Hospital in Sioux Falls, Memorial Hospital in Watertown, Sacred Heart Hospital in Yankton and St. Luke's Hospital in Aberdeen, as initial evaluation and treatment centers. A list of qualified physicians interested in serving on the staff of these centers was prepared according to criteria approved by the House of Delegates on May 15, 1965.

3. **Annual Meeting of the Medical Association** will be held at the State Fair Grounds, Huron, May 21-24, 1966. The format for the two-day scientific portion is as proposed by the Commission, embodying suggestions from the membership, (Commission Report No. 4, Paragraph 6, April 19, 1965) and approved by the House of Delegates. Mr. Erickson undertook to contact presidents of specialty societies to determine the willingness of their groups to organize and present section programs on Monday afternoon, May 23rd. These would include in each case a specialty guest speaker who would also address the general scientific assembly Monday morning. Affirmative replies have been received from specialty groups for Surgery, Obstetrics and Gynecology, Pediatrics; Eye, Ear, Nose and Throat; and Orthopedics. Those of Medicine and Pathology have indicated interest and will soon meet to decide on participation. For the Tuesday morning session, May 24th, Commission members were directed to suggest physicians from their areas to present talks.

On Tuesday afternoon, three or four workshops or seminars will be offered with attendance limited to those who pre-register for them. At present the South Dakota Chapter of the American Heart Association is considering presentation of a workshop in the area of heart disease; Dr. Kendall Burns will organize a workshop on problems in electrolyte imbalance, and there is a possibility of programs on psychiatry in general medical practice, and in the field of geriatrics.

4. **Diabetes:** The executive office has received information from the American Diabetes Association concerning National Diabetes Week, November 14-20. Consideration will be given as to ways in which the medical association may co-operate with the Diabetes Detection Drive.

5. **Mental Health:** Commission member R. S. Jones, M.D. has presented information concerning the Association of S. Dak. Mental Health Centers organized in Huron, October 19, 1964. The stated aims are: "Promotion of community mental health and promotion of treatment of mental and emotional disorders within the community setting whenever possible" as well as the study and discussion of matters of mutual interest, establishment of standards for centers and procurement of continued support for centers. The organization is actively concerned with the development of the Community Mental Health Services Act in the State. It is anticipated that liaison will develop between this group and the South Dakota State Medical Association.

The Fourth Regional Workshop on Mental Health sponsored by the American Psychiatric Association will be held September 17, 18, and 19, in Omaha, Nebraska, under the chairmanship of Arthur P. Reding, M.D. The Chairman of the Commission on Scientific Medicine has been invited to attend. The workshops are designed to evaluate practices relating to recognition, treatment and referral of mentally ill patients, to consider postgraduate psychiatric education of the general practitioner and to stimulate his interest in this area of medicine.

6. **Clinical Pathology:** A course, "Basic Hematology for the Office Laboratory Technician," was presented jointly by the South Dakota State Medical Association and the Department of Pathology, University of South Dakota School of Medicine at Vermillion, on August 15, 1965. Approximately 25 technicians were registered and all expressed appreciation for this instruction.

7. **Geriatrics:** On August 30 in Pierre, a review of programs for the aged and aging in South Dakota was conducted by the Regional Office of the U. S. Public Health Service at Kansas City in co-operation with the State Department of Health. Dr. G. W. Knabe and Mr. R. C. Erickson attended this meeting devoted to an explanation of the expanding role of the Federal Government in providing health and social welfare services for older persons.

Respectfully submitted,
G. W. Knabe, Jr., M.D., Chairman
Commission on Scientific Medicine

In addition to this report, Dr. Knabe suggested that additional information be given to all South Dakota physicians on the State TB Program, after the proposals submitted by the Medical Association have been accepted by the State Department of Health.

Dr. Steele moved the adoption of the report. The motion was seconded by Dr. Hayes and carried.

The Council then considered two additional recommendations made by Dr. Knabe.

Recommendation #1: That the Council consider the advisability of requesting the Governor to appoint a Council on Aging and that along with this request, suggest a list of competent members for the Council on Aging to the Governor; it is also recommended that the Medical Association state its interest in the Older American's Act. Dr. Hayes moved that the recommendation be accepted. The motion was seconded by Dr. Leigh and carried.

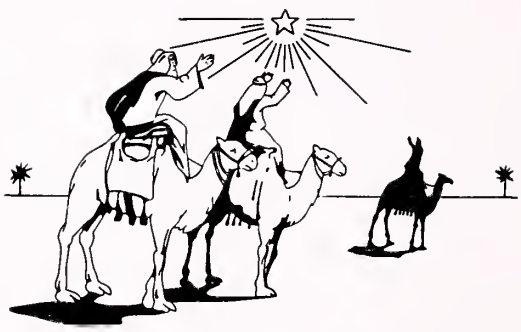
Dr. Steele moved that the State Medical Association request the establishment of a Council on Aging and provide a list of possible appointments for the composition of the Council. The motion was seconded by Dr. Hayes and carried.

Recommendation #2: That the Medical Association's Council give its approval to the medical school for accepting the offer from the USPHS of a Public Health Service physician on assignment to explore heart disease activities in the State of South Dakota. Dr. Perry moved that the medical school be authorized to follow through on the offer and accept the physician for a specified time in South Dakota. The motion was seconded by Dr. Stransky and carried.

There was no report from the Commission on Communications.

The meeting adjourned on motion at 3:30 p.m.

CORRECTION: T. H. Willcockson, M.D., was inadvertently omitted from the list of contributors to the South Dakota Medical School Endowment Association, which appeared on page 34 of the October issue of the Journal



SEASON'S GREETINGS

Dear Doctor:

Each Christmas, we of the executive office like to sit back and review the good things that have happened to us during the year.

As always, the best of the "good things" is our relationship with you, our bosses.

So with the Season well in swing let us pause to say "Thank you" and also to wish you the merriest Christmas ever.

For the New Year, we wish you continued success, happiness, and a year of new and gratifying experiences.

Very sincerely yours,

Richard C. Erickson
Patty Butler
Randall Tuffs
Robert Green
Mary Ann Nordland
Judee Schlosser
Judy Burkman
Mary Bultena
Sharen Brown
Henri Lawrence
Pat Leesch
Eve Sylvester
Barbara Jones
Mary Tunell
Gwen Eggebraaten





PRESIDENT'S PAGE



Fellow members:

Utilization and Review Committees are, at present, being discussed throughout the country, especially in connection with the recently passed "Medicare" program.

At the 1965 Annual Meeting of the South Dakota State Medical Association your House of Delegates established a state-wide Utilization and Review Committee within the working structure of your Association.

As instructed, I appointed this committee and the organizational meeting was held the middle of November.

One should recognize the important tasks facing these six physicians, especially the far reaching effect on medicine that a committee of this type can and must create.

The cooperation of the doctors of South Dakota, individually and collectively, will be needed by the committee in order that it can function effectively. Today medicine is faced with a choice — that of establishing working committees of this type at the staff, district and state levels; or, by default, delegating the authority to lay people.

In the near future, you, as a physician, may be asked to serve on a Utilization and Review Committee at some professional level. Your acceptance of the task and the responsibility involved could ultimately mean the difference between physician controlled or non-physician controlled committees.

Paul Hohm, M.D.
President

THE STOCK MARKET AND YOU

BOOM CONTINUES

by Milt Gaster
Registered Representative
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In the last month or so most economic forecasters have raised their sights considerably on the economic prospects for 1966. At mid-year many economists were expecting a slow-down in the rate of economic growth next year but now virtually all of them foresee a continuation of the above average rate of economic growth.

Basic reasons for expecting continued boom conditions next year are (1) another large increase in capital expenditures by business for new plant and equipment, and (2) an increase in military spending to fight the Viet Nam war. A well-known private survey of capital expenditure plans indicates that businessmen intend to spend 12% more in 1966 than in 1965 for new plant and equipment. Generally, these surveys have been quite reliable. These increased expenditures are made necessary by the sharply rising demand for goods in the past four years. Even though capital spending has increased sharply, plant capacity has lagged behind the rising demand so that additional capacity is necessary to supply normal requirements. This is a key point overlooked by those people who said that the capital expenditure boom could not continue. Increased defense expenditures should be on the order of $6 billion. We learned at a Security Analysts' Conference in Washington recently from top Government officials that another tax cut was planned for 1966 until the Viet Nam situation escalated. Consequently, if there is any cessation in hostilities one can fairly reliably expect a cut in income taxes, probably in the form of an increase in personal exemptions from $600 to $1,000 to offset the effect of any future cutback in defense expenditures.

State and local government expenditures should continue their ever increasing trend. Recent surveys show that consumer confidence and intentions to buy durable goods are at an all-time record high. These consumer surveys have also proven to be quite accurate. With increased incomes and the high level of confidence, 1966 should be another outstanding year for consumer durables and the automobile executives who are forecasting another 9 million car year may not be having a pipe dream. In terms of numbers, we now expect Gross National Product (based on the revised figures) to equal $670 billion in 1965, up from $629 billion in 1964. In 1966, GNP should easily cross the $700 billion mark.

In 1966 business will have to absorb increased Social Security payments but with sharply increased demand and full utilization of plant, corporate profits should rise by 5% - 10%.

INFLATIONARY PRESSURES DEVELOPING

While the Government officials at the Washington Conference felt that inflationary pressures could be contained, even under these booming conditions, shortages of skilled labor and productive capacity are developing. Consequently, it will be difficult to avoid rising prices without the exercise of considerably more monetary restraint which, in turn, might slow the expansion. While the Government economists are deeply concerned about industrial and commodity prices as they relate to the balance of payments and domestic production, it is doubtful that sufficient restraint will be applied to halt the boom. Consequently, a little tighter money, plus a little inflation appears in the cards for next year.

BALANCE OF PAYMENT DEFICIT TO GET WORSE BEFORE IT IMPROVES

The balance of payments deficit has dropped sharply in 1965 and was actually slightly in the black in the second quarter. This improvement was primarily due to the reaction of businessmen and bankers to the Presidential request to finance foreign projects with foreign capital, to repatriate whatever funds could be brought back to this country, and to limit foreign bank loans. The actual spending of funds for plant and equipment abroad, however, has doubled in the first half. Return on these foreign investments will lag the expenditures. Thus, the corrective forces that have been taken are essen

tially one-shot affairs while the basic problem of excessive foreign investment continues which will probably produce sizable deficits and probably more direct controls before the payments deficit ultimately gets solved.

LONG-RANGE OUTLOOK BRIGHT

McGraw-Hill just released the results of a study which indicates that the economy will enjoy an accelerated growth rate for the next fifteen years. McGraw-Hill projects 4.1% annual growth in GNP (in constant dollars) through 1980 which compares with 3.8% from 1947-1965 and 2.5% from 1909-1939. This would result in GNP of $1 trillion for 1975 and $1.2 trillion by 1980, almost a doubling of the size of the economy in a decade and one-half. The report also expects recessions to be fewer and milder largely as a result of a more vigorous exercise of fiscal policy.

SKIN CANCER—

(Continued from Page 32)

usually tolerates this radiation well.

Many difficult to treat and advanced lesions that, otherwise, could be eradicated only by mutilating surgery are amenable to this type of treatment which, at the same time, preserves a maximum of tissue and thus also gives cosmetically superior results.

After any type of radiation therapy for cancer of the skin, a strong, local reaction consisting of considerable redness, swelling, denudation, oozing, crusting and pain will develop. It will subside in six to eight weeks.

MICROSCOPICALLY CONTROLLED, GRADUAL CHEMOSURGICAL excision of external cancer as pioneered by Dr. Frederic Mohs at the University of Wisconsin is a laborious procedure. Tissues are being fixed in situ with zinc chloride, excised in layers and each piece examined microscopically. The location of every excised piece is marked on a map. With this procedure, one is able to follow all extensions of the malignancy and this way able to determine, microscopically, when complete excision has been achieved. This is the case when no more cancer cells show up in any of the excised tissues. Cosmetically, the method gives good but not superior results. However, it is superior to any other method in the eradication of difficult, recurring malignancies. It eradicates cancer that one could not touch with any other method, at the same time preserving what tissues can be salvaged. In such desperate cases, it certainly has been life-saving. With this method, the defect usually granulates and heals in within two to three weeks. Large defects are, thereafter, amenable to plastic repair.

The future of therapy of skin cancer probably lies, like the treatment of other types of cancer, in the realm of chemotherapy, both local and systemic. Tangible results have been achieved experimentally to date, but the practical application still lies in the future.

IMPLANTATION OF PACEMAKER—

(Continued from Page 34)

The staff of a small hospital should study the possibility of emergency use of the intravenous pacemaker. In reviewing cardiac deaths in small community hospitals, and in a good many of the large hospitals, it would appear that this procedure would salvage many lives which have in the past been lost for lack of a means of treating or transporting a cardiac emergency meeting the criteria for a pacemaker.

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3. Chardack, W. M., Gage, A. A., and Greatbatch, W., "Correction of Complete Heart Block by a Self-Contained and Subcutaneously Implanted Pacemaker" **The Journal of Thoracic and Cardiovascular Surgery** 42:814 (1961).
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WHO WANTS THE CHEAPEST DRUG?

When a prescription contains a generic name, it is still incumbent on the pharmacist to dispense a drug he knows to be of the highest quality. Shall we give our patients the cheapest? Is it through no accident that cheap has come to mean inferior as well as inexpensive? When a reputable and well known house puts its name on a product, it has added something to it, and what may be its most important element. If we could be sure that our patients could get the same medication and save money while doing it, other arguments might not carry the day. But if there is a difference, then it is well worth it. Frank Cole, M.D., in **Nebraska State Medical Journal,** (50:507), October, 1965.

Path C A P sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

PARTIAL THROMBOPLASTIN TIME (P. T. T.)

The bleeding time and coagulation time are probably the most frequently utilized preoperative procedures to detect coagulation abnormalities. These tests have saved the lives of many occult bleeders, but patients with mild coagulation diseases have gone undetected when only these procedures were used. Development of the partial thromboplastin time (P.T.T.) has allowed significant refinement in evaluating the coagulation status of surgical patients. This rapid, sensitive screening test will detect a mild deficiency of most of the coagulation factors, whereas the coagulation time is a relatively crude test that will often reveal only those coagulation abnormalities of a more severe nature.

The P.T.T. utilizes an "incomplete (partial) thromboplastin" that is prepared by extracting "complete thromboplastin" with ether. This reagent when mixed with recalcified plasma will detect deficiencies of all the recognized clotting factors involved in all stages of the coagulation mechanism except factor VII and platelet factor. Factor VII deficiency can be detected utilizing the prothrombin time determination in conjunction with the P.T.T. Examination of the platelets in the peripheral blood film will give some indication of a possible platelet abnormality.

Therefore, in screening pre-surgical patients the P.T.T., prothrombin time, examination of platelets in a peripheral blood film, and a complete history will detect most coagulation deficiencies. In addition, a tourniquet test is recommended to rule out intrinsic vascular defects on those patients who have a history of easy bruising.

The P.T.T. is performed on plasma that may be obtained either by venipuncture or finger puncture in the case of infants and small children.

The normal range of P.T.T. depends upon the type of reagent used. Each manufacturer lists the normal range for that particular reagent.

In addition to pre-surgical evaluation, the P.T.T. can be useful in following a patient with a bleeding defect which is being corrected with specific therapy.

It should be emphasized that the P.T.T. is a screening procedure. More refined techniques are utilized to pinpoint the precise deficiency that may exist.

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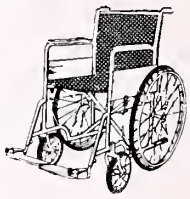
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WHAT INDUSTRY FINANCES ITSELF?

U. S. drug manufacturers reinvest the equivalent of half their profits — after taxes — in research and development. Unlike such industry categories as aircraft and missiles, or electrical equipment and communications — where research is for the most part financed by government funds — pharmaceutical research is underwritten almost entirely by the industry itself. Editorial in **Rocky Mountain Medical Journal,** (62:31), October 1965.

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NEWS NOTES

B. T. Otey, M.D., Flandreau, South Dakota, is one of eleven men named as new directors of the American Cancer Society's South Dakota Division. The men were named at the annual meeting of the Division October 1st and 2nd at Huron.

* * *

Marshal of the 1965 Hobo Day Parade at Brookings, South Dakota, was **H. P. Volin, M.D.,** of Lennox. Dr. Volin is a 1905 graduate of South Dakota State University, and one of South Dakota's oldest practicing physicians.

* * *

Howard Seely, M.D., of Long Beach, California, has joined the staff of the Fort Meade Veterans Administration Hospital as chief of the physical medicine and rehabilitation service.

A native of Rugby, North Dakota, Dr. Seely received his M.D. from Loma Linda University in Los Angeles in 1953 and received specialized training in physical medicine and rehabilitation at a Veterans Administration hospital in Long Beach.

The North Central Medical Conference was held during the week end of November 7 and 8, 1965. Those physicians representing South Dakota included: **Drs. D. L. Scheller,** Arlington; **A. P. Reding,** Marion; **Paul H. Hohm,** Huron; **Michael M. Morrissey,** Pierre; and **Alonzo P. Peeke,** Volga. In addition, Mrs. Patty Butler, Robert Green, and Richard C. Erickson, executive secretary, attended the meeting.

Dr. Hohm appeared on the Legislative Round-Up Panel and discussed the legislative activities for South Dakota in 1965. Dr. Arthur Reding appeared on the Panel and discussed the Gunderson report affecting the AMA House of Delegates.

* * *

The Watertown District Medical Society met on November 2nd, with 20 members attending the meeting. **Paul Hohm, M.D.,** President of SDSMA, made his official visitation and spoke to the district on physician rights and responsibilities under "Medicare."

* * *

Wayne A. Geib, M.D., Rapid City, was re-elected a delegate-director of the American Cancer Society by members of the society's House of Delegates meeting in New York on October 27th.

H. Russell Brown, M.D., Watertown, spoke and represented the "physician" on a panel at the National Association of Blue Shield Plans' Annual Program Conference in Chicago on October 25th.

* * *

ACS ACCEPTS S. DAK. PHYSICIANS

E. C. Hanisch, Jr., M.D., Huron, and **Albin J. Janusz, M.D.,** Aberdeen, have been given membership in the American College of Surgeons. The two physicians were accepted at the ACS session in Atlantic City, New Jersey.

YOUR CONTRIBUTION TO THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT FUND IS NEEDED

At their September meeting, the 19th General Assembly of The World Medical Assembly approved the admission of the national medical associations of Liberia and Malta as new members.

Total membership of The World Medical Association is now sixty national medical associations. Founded in 1947 to improve world health, the association's primary activities are in the field of medical education, medical ethics, and in socio-economic areas of interest to the medical profession.

* * *

UPJOHN ANNOUNCES NAME CHANGES

The Upjohn Company has announced name changes of two of its products. PAMINE PB® — (Formerly Pamine — Phenobarbital) and ADE-FLOR B* DROPS (Formerly Zymaflor® Drops). All dosage forms, package sizes and prices of both products remain unchanged.

(* Trademark)

S. DAK. ADDS TWO TO AAGP

Two South Dakota physicians have been elected to active membership in the American Academy of General Practice. They are **Melvin A. Marousek, M.D.**, Belle Fourche, and **Alfred Shousha, M.D.**, Hoven.

* * *

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia, announces to the profession its Thirty-Ninth Annual Spring Congress in Ophthalmology and Otolaryngology, April 4 through April 8, 1966. For information, write: Superintendent, Post Office Box 1789, Roanoke, Virginia.

* * *

1965 AMA MEETING NEWSFILM AVAILABLE

"AMA 1965," a 40 minute newsfilm covering highlights of the 1965 meeting of the American Medical Association, is now being made available for group showings by Pfizer Laboratories division, Chas. Pfizer & Company, Inc.

The film is a condensation of more than two hours of scientific news coverage which was filmed and videotaped during the 1965 meeting. Leaders in many fields of medicine are interviewed. Among them are Nobel Prize Winner Albert Szent Gyorgyi, M.D., Ph.D., Marine Biological Laboratory, Woods Hole, Mass.; John Lawrence, M.D., Director of the Donner Radiation Laboratory, University of California at Berkeley, California and many others.

The film is available from the Pfizer Medical Film Library, 267 West 25th Street, New York, New York, 10001.

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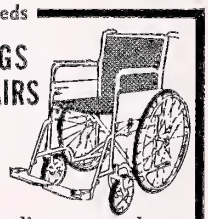
ABERDEEN RESIDENT JOINS J. B. ROERIG

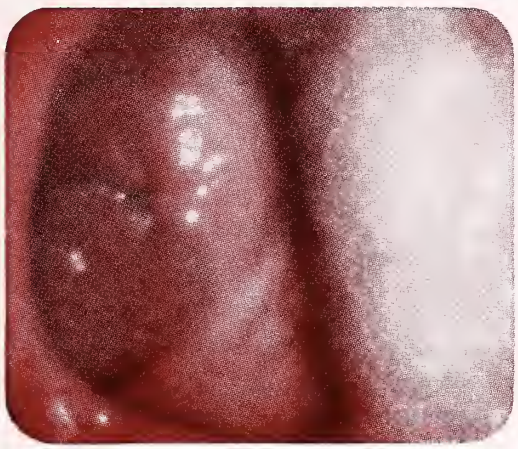
James R. Lewno of Aberdeen, South Dakota, has been appointed a medical service representative by J. B. Roerig and Company, a pharmaceutical division of Chas. Pfizer & Co., Inc.

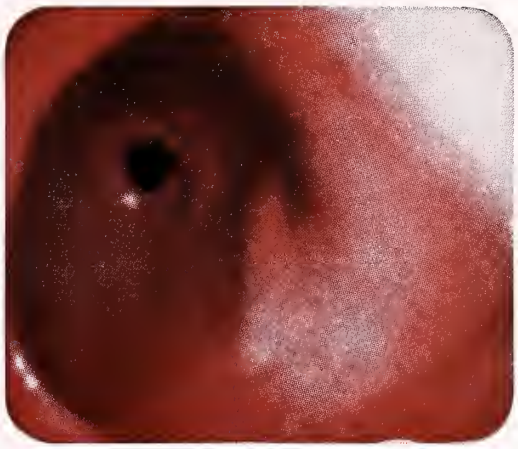
Mr. Lewno will be calling on physicians, dentists, pharmacists and other members of the health professions in Aberdeen.

DANGER — BATHTUB AHEAD

Ill-advised statements and actions since the thalidomide phenomenon, aided by the unbalanced perspective given these statements in the lay press, have contributed to the public's apprehension — approaching hysteria — concerning the side effects of drugs. To the extent that this concern admonishes greater caution and alertness in the use of drugs, some good may be salvaged from the thalidomide tragedy. But to the extent that it deprives patients of useful new drugs or frightens a physician into withholding needed therapy from his patients, it is regrettable. We must not forget that there is no progress without risk, whether it be in the field of electricity, the motor car, the airplane, atomic energy, space exploration, or drugs. Even a bathtub can be perilous, as astronaut John Glenn discovered. Theodore G. Klumpp, M.D., in **Massachusetts Physician**, (28:-207-208), June-July 1965.

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Intragastric photography studies[1]

A/ E. B., male, age 48. Normal antral contraction. Pyloric opening is not seen. It is difficult to differentiate a deep prepyloric contraction from a "pyloric fleurette" or true pylorus.

B/ Same subject after 6 mg. of propantheline bromide intravenously; antral contractions ceased. The pyloric orifice remained open and was easily identified. Better visualization of the antrum was also obtained.

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Pro-Banthine is so effective in anticholinergic action that it may be employed in visualizing the entire pyloric region.

In addition to the intragastric photographs, cinegastroscopic studies[2] have demonstrated graphically not only its effectiveness but the superiority of Pro-Banthine over belladonna alkaloids.

Pro-Banthine produced complete cessation of gastric, antral and pyloric motor activity with a dose of 6 mg. intravenously. This is approximately one-third the usual oral dose of 15 mg.

Atropine at full normal dosages did not produce such cessation. It required double the usual oral dose of atropine, 0.8 mg. intravenously, to duplicate the aperistaltic action of Pro-Banthine. This dose of atropine produced pronounced discomfort and tachycardia with ventricular rates as high as 150 per minute.

It is this pharmacologic superiority of Pro-Banthine which has made it the most widely prescribed anticholinergic in such conditions as peptic ulcer, functional hypermotility, irritable colon, pylorospasm and biliary dyskinesia.

Dosage—The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15 mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily. Pro-Banthine (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg.

Side Effects and Contraindications—Urinary hesitancy, xerostomia, mydriasis and, theoretically, a curare-like action may occur. The drug is contraindicated in patients with glaucoma or severe cardiac disease.

1. Barowsky, H.; Greene, L., and Bennett, R.: Investigators' Clinical Report. Photographs courtesy of Drs. H. Barowsky, L. Greene and R. Bennett.

2. Barowsky, H.; Greene, L., and Paulo, D.: Paper read at Meeting of American Society for Gastrointestinal Endoscopy, Montreal, Canada, May 25-27, 1965.

SEARLE

Research in the Service of Medicine



the sedentary life is often the seat of low back pain

The human spine is not engineered for prolonged sitting at desks, pianos, typewriters and drafting boards. The stresses set up by the heavy, forward-tilted head and trunk, balanced precariously on an insufficient base, result in strain of the dorsal musculature, particularly at the low lumbar level.

The unusual muscle-relaxant and analgesic properties of 'Soma' make it especially useful in the treatment of low back sprains and strains. 'Soma' is widely prescribed ☐ **to relieve pain** ☐ **to relax muscles** ☐ **to restore mobility.**

Indications: 'Soma' is useful for management of muscle spasm, pain, and stiffness in a variety of inflammatory, traumatic, and degenerative musculoskeletal conditions. It also may act to normalize motor activity in certain neurologic disturbances.

Contraindications: Allergic or idiosyncratic reactions to carisoprodol.

Precautions: 'Soma', like other central nervous system depressants, should be used with caution in patients with known propensity for taking excessive quantities of drugs and in patients with known sensitivity to compounds of similar chemical structure, e.g., meprobamate.

Side Effects: The only side effect reported with any frequency is sleepiness, usually on higher than recommended doses. An occasional patient may not tolerate carisoprodol because of an individual reaction, such as a sensation of weakness. Other rarely observed reactions have included dizziness, ataxia, tremor, agitation, irritability, headache, increase in eosinophil count, flushing of face, and gastrointestinal symptoms.

One instance each of pancytopenia and leukopenia, occurring when carisoprodol was administered with other drugs, has been reported, as has an instance of fixed drug eruption with carisoprodol and subsequent cross reaction to meprobamate. Rare allergic reactions, usually mild, have included one case each of anaphylactoid reaction with mild shock and angioneurotic edema with respiratory difficulty, both reversed with appropriate therapy. In cases of allergic or hypersensitivity reactions, carisoprodol should be discontinued and appropriate therapy initiated. Suicidal attempts may produce coma and/or mild shock and respiratory depression.

Dosage: Usual adult dose is one 350 mg. tablet three times daily and at bedtime.

Supplied: Two Strengths: 350 mg. white tablets and 250 mg. orange, two-piece capsules.

Before prescribing, consult package circular.

for the relief of low back sprains and strains

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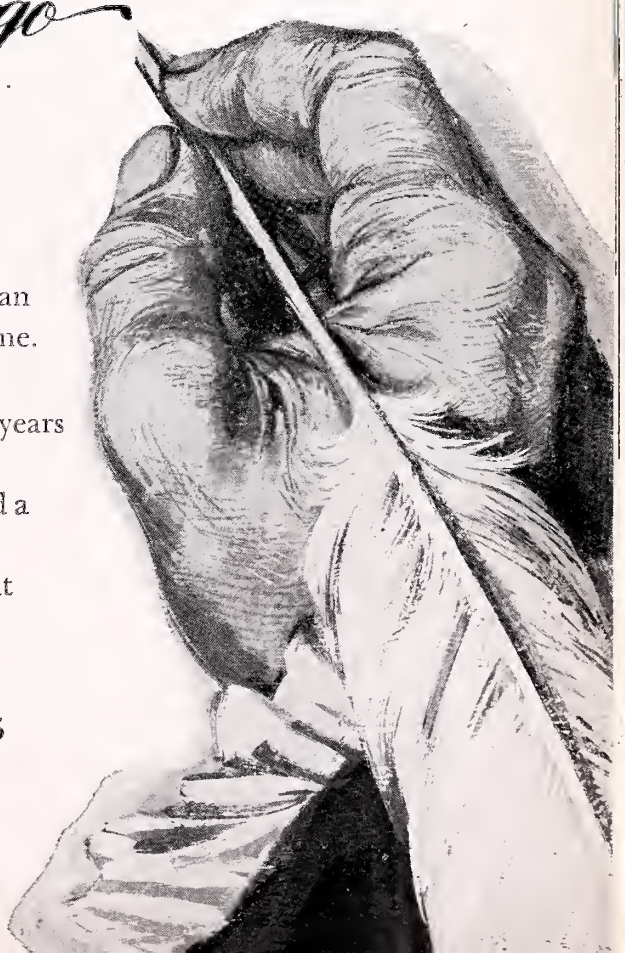
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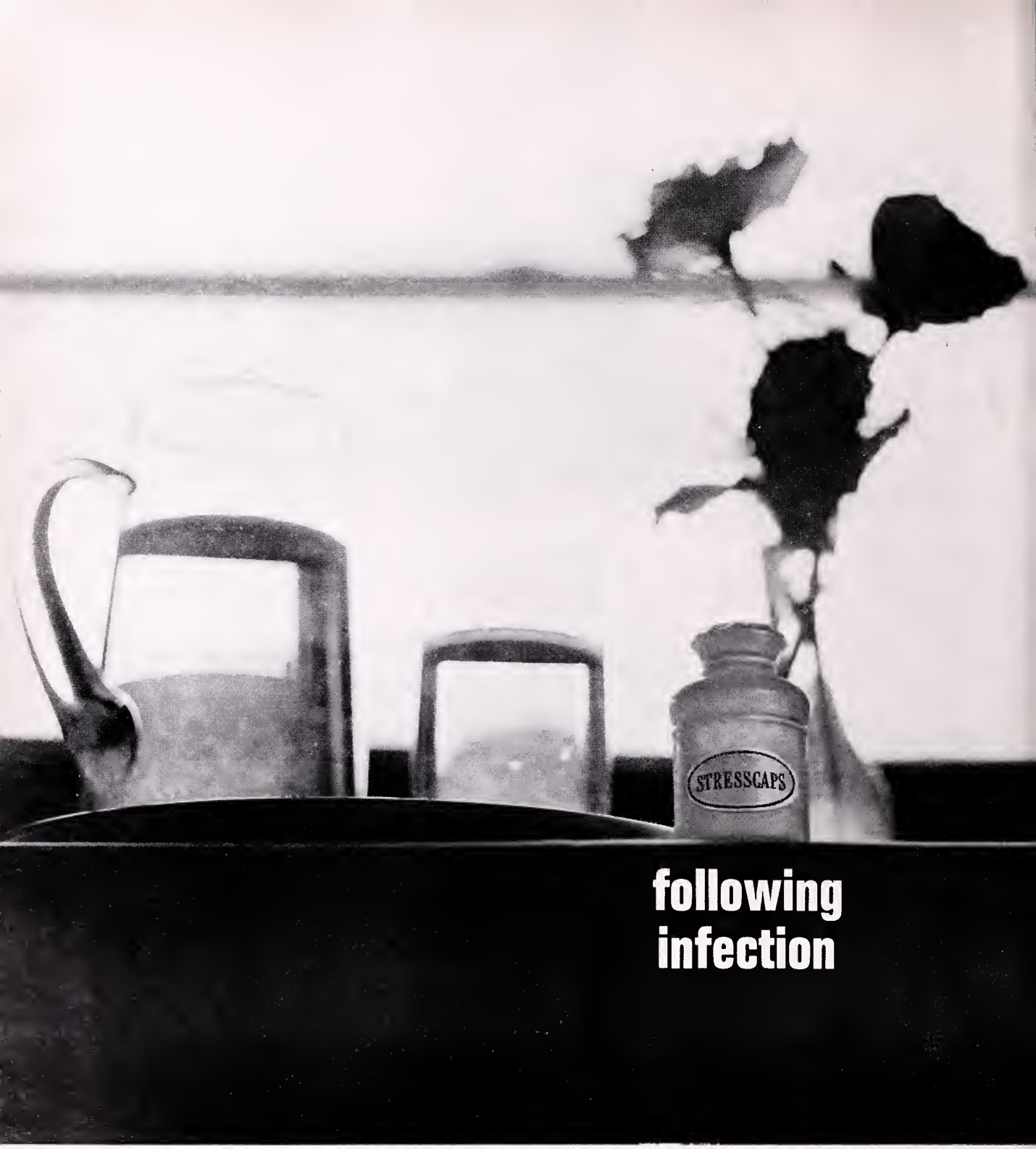
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when President Washington signed the first U.S. patent law. For patents mean drug progress. For example, of the 604 important drugs introduced worldwide since 1941, the majority originated in the U.S. drug industry. By contrast, a major west European nation, which has no patent protection, contributed one.

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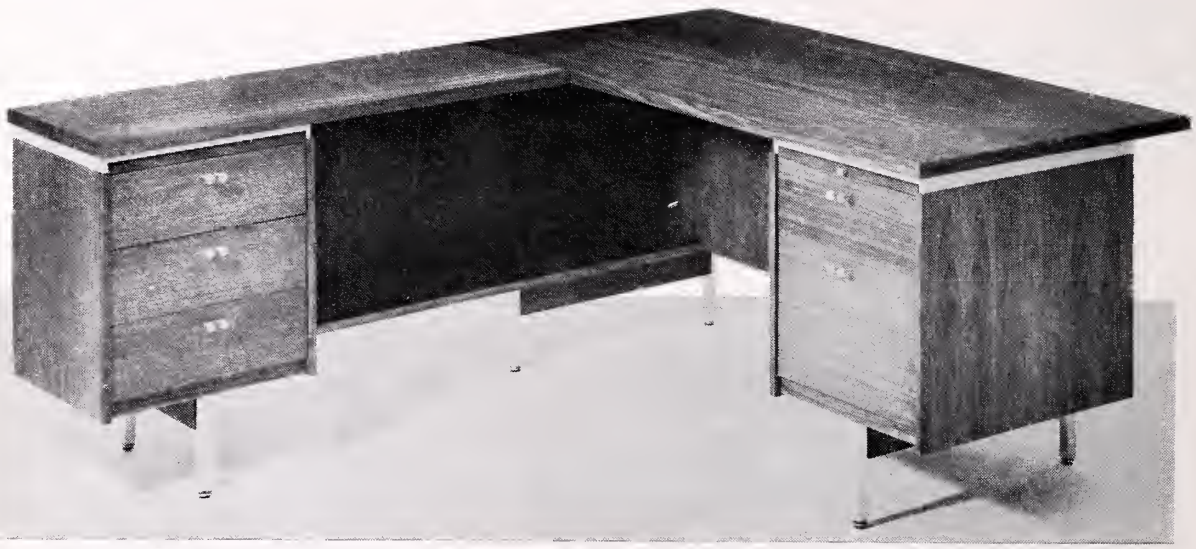
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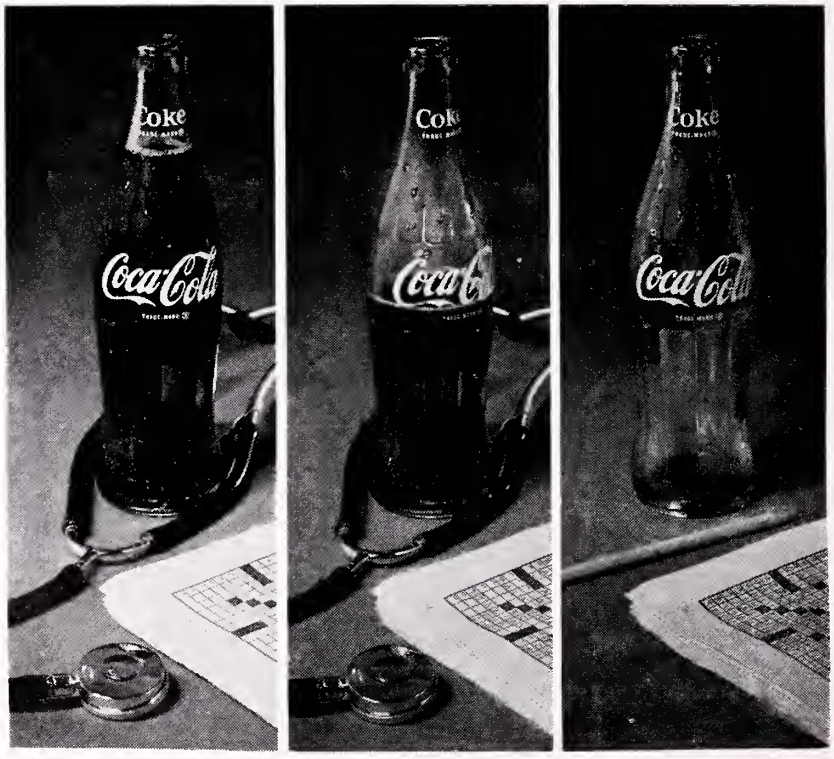
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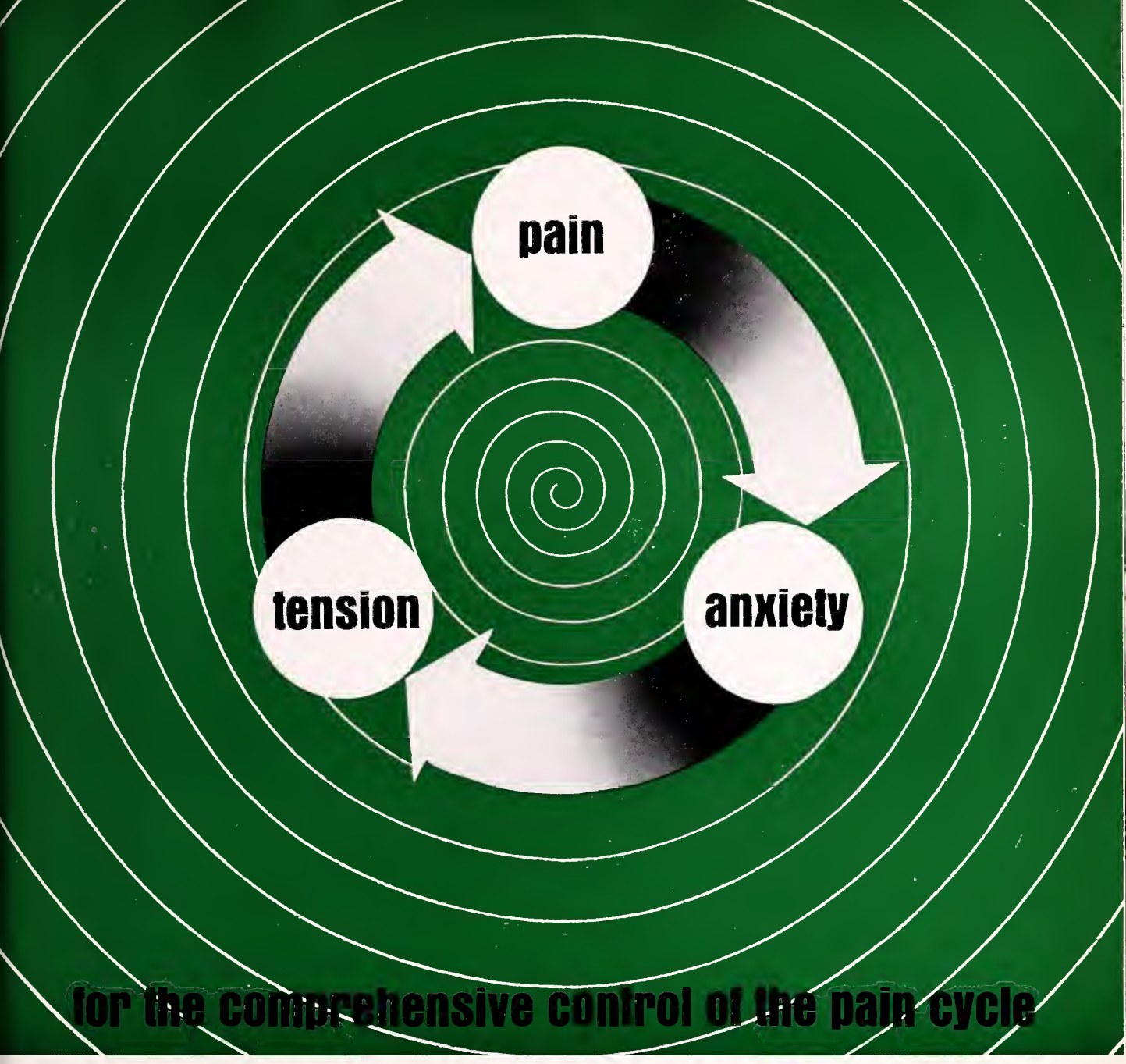
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Dosage for adults is usually 2 tablets three or four times daily, the suggested dosage for children from 5 to 12 years is 1 tablet three or four times daily.

Supplied in bottles of 100 and 1000 tablets.

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ANIMALS TO PROTECT BABIES

The problem of predictability of toxicity of drugs continues to be subject to considerable scrutiny by pharmaceutical research scientists. Many thousands such scientists are at work independently or in consultation with the pharmaceutical industry, or are employed under government or private auspices. Testing of drugs before they are marketed is extremely thorough. The Pharmaceutical Manufacturers' Association states that its members made use of nearly nine million animals in 1961, including 5.7 million mice, 2.2 million rats, 739,000 chickens, 107,000 guinea pigs, 98,000 rabbits, 36,000 dogs and 18,000 cats, as well as thousands of other birds and animals. The possibility of drug effect upon the unborn child has not been neglected, although the recent attention this has received in the public press has caused it to be considered very gravely by all concerned. Editorial in **Chicago Medicine,** (68:873), October 2, 1965.

* * *

AMA ASKS ASSISTANCE

The American Medical Association has encouraged insurance companies to "assume an important role" in administering the medical-surgical part of the recently-enacted medicare program.

Robert R. Neal, General Manager of the Health Insurance Association of America, announced that the AMA's action was reported to him in a letter from F. J. L. Blasingame, M.D., Executive Vice President of the medical organization.

According to Mr. Neal, the letter stated that the AMA Board of Trustees, at a recent meeting, voted that the following statement be adopted for transmittal to the Health Insurance Association of America:

> "The Supplementary Medical Insurance Program of the Medicare Law (PL 89-97) calls for voluntary health insurance plans, group health plans, and private insurers to enter into contracts with the government to provide specified administrative functions.
>
> "The Board of Trustees of the American Medical Association encourages the health insurance industry to assume an important role in the administration of the medical-surgical portion of the medicare program."

Description: Hygroton, brand of chlorthalidone, is an oral diuretic agent of value in the treatment of edema and hypertension. The drug is notable for its prolonged action (48-72 hours) and low toxicity. It is not a thiazide and may often be employed successfully in patients who are intolerant of other agents or become refractory to them.
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Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Warning: With administration of enteric-coated potassium supplements, the possibility of small bowel lesions should be kept in mind.
Precautions: Reduce dosage of concomitant antihypertensive agents by at least one-half. Discontinue if the BUN rises or liver dysfunction is aggravated. Electrolyte imbalance and potassium depletion may occur; take special care in cirrhosis or severe ischemic heart disease, and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.
Side Effects: Agranulocytosis, constipation, dizziness, dysuria, headache, hyperglycemia, hyperuricemia, impotence, leukopenia, muscle cramps, nausea, postural hypotension, purpura, thrombocytopenia, transient myopia, urticaria, vomiting and weakness.
Average Dosage: One tablet (100 mg.) daily with breakfast.
Availability: Tablets of 100 mg. in bottles of 100 and 1000. For full details, see the complete prescribing information.

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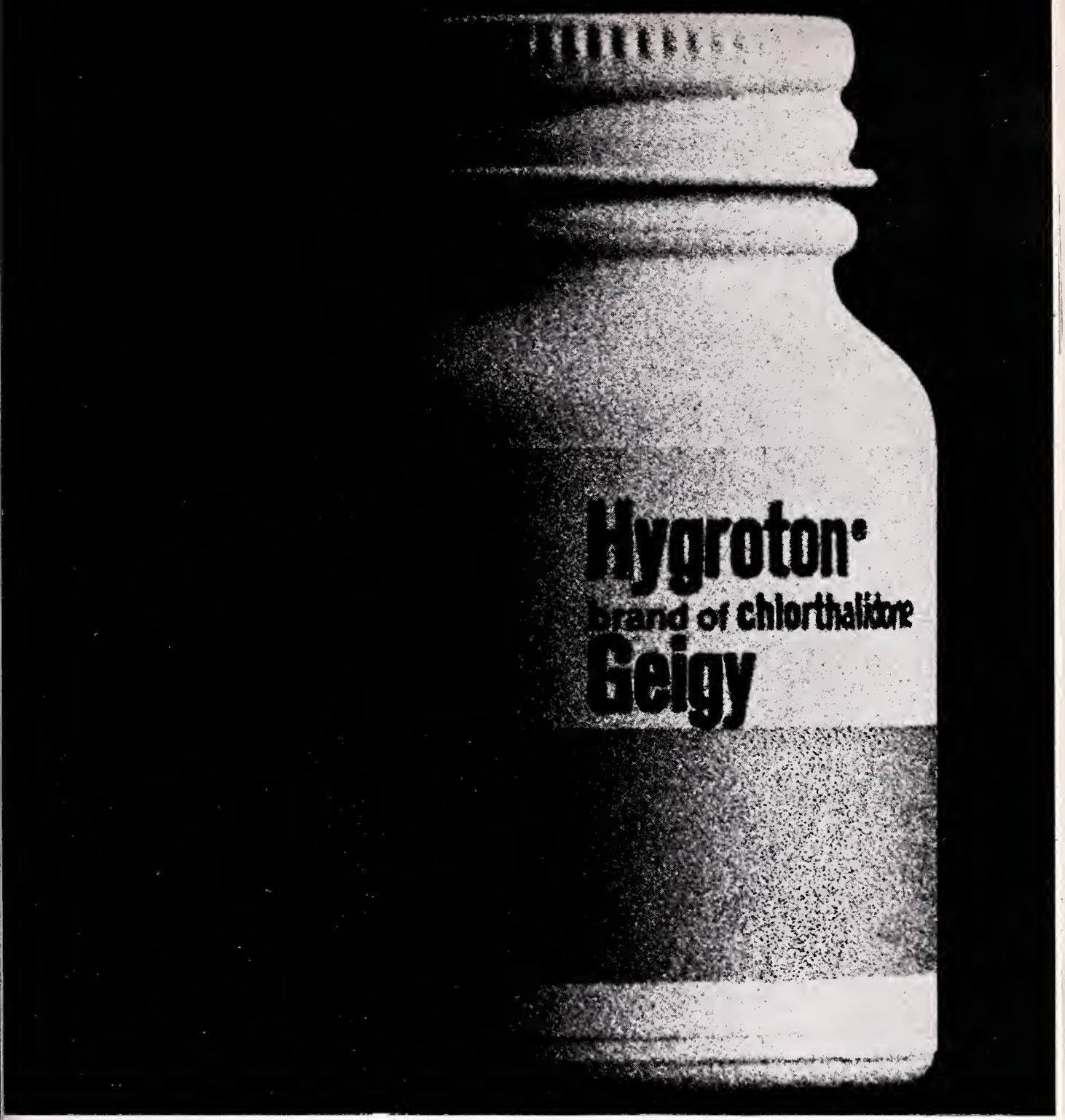
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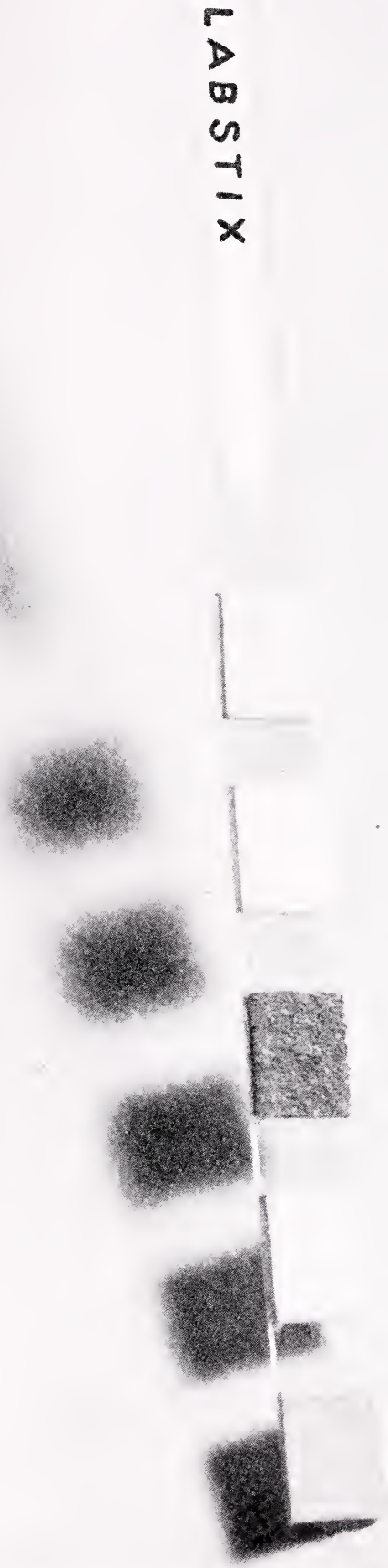
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